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COLORADO MEDICINE

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VOL. I.

DENVER, MARCH, 1904.

No. 5

LEADING ARTICLES

GENITAL AND PERITONEAL TUBERCULOSIS IN COLORADO.

In the absence of complete statistics it is impossible to estimate accurately either the actual or relative frequency of genital and peritoneal tuberculosis in this state, but there is a fixed belief among those physicians who are best fitted to judge that these phases of the disease are not as prevalent as the large population of tubercular individuals would justify, nor are they thought to be so frequent as in the older portions of the country where many of us have practiced.

The same sort of observations long ago led to a similar belief in regard to the relative infrequency of glandular and bony tuberculosis, though many of the children born in Colorado are of tubercular parentage upon one or both sides.

Notwithstanding the presence of many thousands of tubercular refugees it is true that the development of any form of tuberculosis in Colorado residents is so rare as to excite comment, and all forms of extra-pulmonary tuberculosis are most exceptional in natives.

However, there is always to be considered in genital and peritoneal tuberculosis the great difficulty of making an exact diagnosis, and in females the tubercular diseases of the pelvic peritoneum, tubes, and fundus of the uterus—which are the most common forms—may not be absolutely diagnosticated until an operation is done and the tissues can be seen or examined microscopically.

If our methods of diagnosis were more perfect there is little doubt that we should

find these phases of tubercular disease much more common than we now suspect, as has been the case with so many other diseases.

Senn points out the significance of the usual evening rise of temperature of tuberculosis, with a normal or subnormal one in the morning, associated with the typical physical and objective signs of disease of the tubes, uterus or pelvic peritoneum; and it would seem that the tuberculin test might also be used to some purpose in working out the problem.

In view of the very favorable prognosis that can ordinarily be made from the surgical treatment of these tubercular diseases of the peritoneum and female genital organs, it is important to give the diagnosis of the malady the utmost consideration, and here in Colorado, where we have so many pulmonary tubercular cases, the possible existence of a peritoneal or genital focus of the disease should never be lost sight of.

Fortunately it is oftentimes unnecessary to make an exact diagnosis of the particular pathologic process presented, for, as Charles Mayo says about diseases in the vicinity of the gall bladder and pylorus, it is enough to diagnose a "surgical condition" for the relief of which an operation is necessary. Moreover, there is a well-founded belief among surgeons in Colorado that the results of surgical treatment in all of these extra-pulmonary forms of tuberculosis are much better here than in lower and damper climates.

This geographic advantage to tubercular surgical patients may be due to the specific effect of the increased dryness, sunshine and altitude—the beneficence of which is acknowledged for the pulmonary forms—or to those local conditions which

are known to prevent or inhibit certain putrefactive and infective processes.

The practical demonstrations of the last hypothesis by our mountaineers, in their open air preservation of meat, and their empirical belief in the primary non-suppurative healing of their wounds, are significant.

HORACE G. WETHERILL.

INTRACEREBRAL INJECTIONS OF ANTITETANIC SERUM IN TRAUMATIC TETANUS.

In 1898, Roux and Borrel saved by intracerebral injections of antitetanic serum 35 guinea pigs out of 45 tetanized; while with the subcutaneous method only two out of 17 cases were saved.

The theory on which these experiments was based is that in cases of traumatic tetanus the toxin has entered the nerve cells, and the intracerebral injection of the antitetanic serum neutralizes the toxin which has become fixed in the cerebral cells. In a recent article by Syjoal, entitled "Cell Changes in Tetanus," he shows that a chemical change takes place in the tigroid substance with a swelling of the cerebral cells. This explanation does not contradict the bacteriological fact that a union of the tetanus toxin with some part of the cell takes place in the nerve cells. It is very probable that the toxin is not formed in the trophic substance, that is the tigroid, but in a specific nervous substance that we are at present unable to demonstrate.

Roux and Borrel concluded that the subcutaneous injection of antitoxin remains in the blood and as a result it is unable to reach the toxin which is fixed in the nervous system; and hence the toxin passes unhindered from one nerve cell to another. This being true, it seems that the intracerebral injection of antitetanic serum is the proper course to follow in the treatment of this disease.

The point at which the trephine opening is made in the skull is half way between the outer angle of the orbit and a point on the vertex, at the juncture of the line crossing over between the two auditory canals. The trephine opening should be small; a small slit made in the membranes, and the needle introduced two inches into the cerebral substance of the frontal lobe.

In the majority of the cases the trephine opening was made on each side of the skull; and from $2\frac{1}{2}$ c.c. to 5 c.c. of the antitoxin was slowly injected into each frontal lobe.

In the three cases operated upon in this city only one trephine opening was used and a much larger amount of the antitoxin was slowly injected into the front part of the right frontal lobe (20 c.c.). From the results in these three cases and those in which a small amount of antitoxin had been used, it is deemed advisable to use a large quantity of the serum. In these three patients the right frontal lobe was selected for the injection because the patients were right handed, and if any paralysis followed the injection of the serum the speech center would not be involved. The reverse would be true in left handed persons.

Thirty cases have been reported in which the intracerebral injection of antitoxin has been used alone. Out of the 30 cases, 12 cases, or 40 per cent, made a complete recovery; while 18 cases, or 60 per cent, died either from the disease or some complication which developed after all the symptoms of tetanus had disappeared.

The statistics of the mortality of cases of traumatic tetanus treated by the usual medical means show a high percentage of deaths. According to Poland and Taylor, who have collected 140 cases of traumatic tetanus occurring in males, 132 died, or 87 per cent; and 24 females, of whom 22 died, or 91 per cent.

From the above statistics it is seen that the mortality of tetanus treated by intracerebral injections of antitoxin is lowered, and therefore it should be given the preference over any other method of treatment so far employed for this disease.

The complications which arise from these injections are cerebritis, meningitis and cerebral abscess. In the majority of the cases that went to post-mortem examination, an abscess of the frontal lobes was discovered. SAMUEL D. HOPKINS.

NOTE AND COMMENT.

The typhoid fever epidemic at Leadville is one of unusual scientific importance because careful investigation by the officers of the State Board of Health, and by Dr. Mitchell for the Leadville authorities, seems to demonstrate a method of contamination of the water supply that is usually overlooked. From the Sanitary Bulletin of the Colorado State Board of Health, for January 31, we are able to add some details to the account in our February number.

"The first case of typhoid fever in Leadville in 1903 was in the month of August. The case came from Breckenridge and was taken to St. Vincent's Hospital. Another case occurred in the same hospital in September and October. This hospital is situated on some of the highest ground in Leadville, and the drainage occurs towards the center of the city. The sewage from the hoppers, sinks, etc., before emptying into the sewer in the street, runs through a settling tank, where heavy matter is allowed to settle, and the liquid passes off into the sewer. This tank is made of brick and mortar, not cemented inside or out, and, consequently, is not water proof.

* * * In view of the fact that the mains were being drained for repairs, the stools from the first cases of typhoid fever were not disinfected; that they were allowed to flow into a settling tank that was not water proof, amounting to nothing more than a hole in the ground; and seepage could easily reach the water mains; that the greatest number of cases occurred in the district lying below the hospital, which would receive this contaminated water, while other districts which did not receive it had but very few cases, all point to this method as being the one which contaminated the water supply."

ORIGINAL PAPERS

CANCER OF THE RECTUM. COMBINED ABDOMINAL AND PERINEAL OPERATION.

BY CHARLES A. POWERS, M. D., DENVER.

That the attempt at thoroughness which characterizes present operative procedure for cancer of the breast, lip, uterus and other organs is extending to operations for cancer of the rectum, seems to be manifest from the recent writings of Abbe, C. H. Mayo, Weir, Kocher, Kraske, Gaudier, Quenu, Trendelenberg and others. No better exposition can be made of the dissatisfaction which surgeons have felt with perineal and sacral methods in high seated rectal cancer than that of Mayo in the *Journal of the American Medical Association* for April 25, 1903, nor can a better plea be offered for the combined abdominal and perineal operation (which Mayo attributes to Gaudier of Lille) than that set forth by him. This latter procedure has the advantage of permitting the operation to suit the case; either a palliative colostomy or the radical removal of the growth *en masse* by incisions wide of the growth itself and embracing all glands, fat and connective tissue, together with the retention of the sigmoid as a faecal container and the placing of a permanent anus in the iliac region where it is most easily borne and managed by the patient.

Errors of technique in the single case reported herewith may be of service to others who undertake the procedure. At the risk of being tedious, the case itself is given at some length. It is presented at this early day purely as an operative illustration. I believe it to represent a type of operation which will gain in favor.

Case. Mrs. W., native of England, 45 years of age.

Previous History. The patient has borne four children, having no special trouble with any of them. She has had

no symptoms referable to the genital tract. She was a well and strong woman up to six months ago, at which time she began to suffer from increasing constipation which was difficult to overcome by medicines. She found that her stools were getting smaller and painful, that a mucous rectal discharge began to appear. She went to a physician who prescribed ordinary remedies. The difficulties increased, it became more and more troublesome to move the bowels, and she began to lose in weight and strength. A little while ago she consulted Dr. M. Baker, who discovered a tumor of the rectum and kindly commended her to me.

Present condition, April 4, 1903. The patient is a rather spare woman five feet one inch in height. Her color is fairly good, she looks to be about 45 years of age. Careful examination of the heart, lungs, kidneys and liver fails to disclose evidence of disease. Her appetite is fairly good, she eats moderately and digests well, but has much difficulty in overcoming a chronic constipation. She says that the stools are small, ribbon-like, painful; that they are occasionally tinged with blood; that during the past few weeks there has been a thin rectal discharge. The bladder has given no trouble.

Local examination. A little above the anus there is an irregular, hard, nodular mass involving the circumference of the bowel and admitting with difficulty the end of the index finger. The finger crowded well up engages in the tumor. The tumor is movable and not particularly painful. The lower portion of it can be felt through the vagina, but the finger behind the neck of the uterus fails to define the upper limit of the mass. The uterus is in a posterior position, the tubes and ovaries are apparently healthy. Abdominal examination is negative.

Diagnosis. Cancer of the rectum, extending high. In view of the high seat and the good general condition of the pa-

tient, combined abdominal and perineal excision was decided upon and the patient was carefully prepared with this in view.

Operation. St. Luke's Hospital, 8:30 a. m., April 11, 1903. Chloroform was skillfully administered by Dr. F. W. Kenney. A short gridiron incision at the outer border of the left rectus permitted the introduction of an exploring finger. The rectal mass was felt low down. It was movable. No enlarged glands could be felt. Gauze packing was introduced into this incision. A median incision was rapidly made from the umbilicus to the pubes, the patient put in a high Trendelenburg position and the intestines carefully packed off. The uterus was drawn forward beneath the pubes. With wide lateral retraction the rectum was in easy view. It was again examined, confirming the exploratory palpation. A point in the sigmoid flexure was selected a little above the brim of the pelvis and the gut milked free of contents. Two heavy purse-string sutures of silk (according to Abbe) were rapidly applied; these were about two inches apart and involved the muscular coats of the gut. Midway between these purse-string sutures the gut was cut square across, the mesentery split down a little and the mesenteric vessels tied. Each end of the gut was then inverted and the purse-string stitches tightened. This completely shut off the lumen of each end of the gut from the operative field. Local packing was rapidly removed, the field sponged out, fresh packing applied and the instruments used in dividing the gut discarded. A comparatively clean operative area containing the two blunt rectal ends was now present. The lower end of the upper fragment was ready to, at any time, be brought out through the exploratory wound as an artificial anus. The mesentery of the upper end of the lower fragment Here the peritoneum was split down a little on each side of the gut and then

divided anteriorly. Below this point it was peeled up with a blunt scissors and the finger, thus rapidly separating the rectum. Posteriorly the superior hæmorrhoidal artery was felt. This was doubly ligated first with heavy catgut, after which the open mouth was picked up and tied with fine silk. Up to this point there had been but very little bleeding, and from this time on the abdominal operative field was practically bloodless. The rectum, with its posterior fat, fascia and lymphatics, was cleanly dissected from the hollow of the sacrum and worked free to the lowest possible point. This was about on a level with Douglas' cul-de-sac. An assistant now passed a long dressing forceps through the vagina up behind the neck of the uterus. The point of this was cut upon from the abdominal side, the vaginal wound enlarged, the upper end of the segment of the rectum and the entire mass which had been dissected free being caught and dislocated into the vagina.* The abdominal wound was washed and the pelvic peritoneum stitched up. This peritoneal suture was difficult. It was deep in the pelvis and I had neglected to preserve quite enough peritoneum to allow the edges to come together without tension. For this reason the peritoneal suture took longer than it should have done. When it was completed, however, the pelvic floor presented something the appearance which it does after an abdominal hysterectomy, plus the presence of the uterus.

The lower end of the abdominal gut was brought out through the original lateral opening. The peritoneum on either side of the mesentery had to be cut a little to allow it to come up without tension. The abdominal packing was removed, the abdomen thoroughly flushed and the median incision sewn up. The gut was then rapidly stitched into the lateral open-

ing, first by catgut stitches joining the edges of the parietal peritoneum to the visceral peritoneum. The purse-string stitch originally put in was removed and the mouth of the gut stitched to the skin. An occlusive dressing was applied to the median wound and a separate dressing to the artificial anus.

The patient was now placed in the lithotomy position, the buttocks well elevated and the remainder of the operation completed from below. The upper portion of the lower fragment of gut was found in the vagina. The vaginal mucous membrane was split in the median line posteriorly and dissected from the rectum on either side. The anus having been sewn up, an incision was made encircling it, and perineal excision of the rectum proceeded with from below, cutting widely on either side and posteriorly to the tip of the coccyx, working up in front of the coccyx and hugging it closely. In this way, keeping close to the coccyx and sacrum and dividing the posterior ligaments of the rectum, one was able to work up and meet the upper wound posteriorly. The rectum was then dissected up on either side, moderate downward traction being made on it. This was the most difficult part of the perineal operation. While working rapidly and with considerable traction the peritoneal stitches which had closed over the floor of the pelvis tore out and a loop of small intestine came down. This was pushed back with gauze and the rectum entirely removed. There was a fair degree of hemorrhage at the lower part of the perineal incision, but practically none at the upper part. The only vessels which required ligation were the inferior hæmorrhoidal arteries on either side. The wound was well flushed and the upper portion explored. An attempt was made to resuture the pelvic peritoneum from below, but it was unsatisfactory. The wound was so deep that it was very difficult to get the peri-

*This mass in the male would be carried downward and backward toward the coccyx.

toneal edges. As has been said, they did not come together easily from the abdominal side, and as the patient had already been under chloroform over three hours it was judged wise to carefully pack off the pelvis. The vaginal mucous membrane was sewn up and a few perineal stitches put in. The cavity left in front of the sacrum and coccyx was a pretty big one. Laterally it was bounded by the obturator fascia. Its edges could not be approximated. It was lightly packed, in part with sterile gauze and in part with the iodoform gauze, and an ordinary perineal dressing applied.

The operation had been a long one, practically three hours and a half. The pulse was 72 at the beginning of the operation; it was the same throughout and at its close. But little blood was lost. Only 15 drachms of chloroform were used. The patient was a thin and favorable subject and was in good condition. She was at all times under full surgical anæsthesia and gave no trouble whatever. She was small of stature and the abdomen and rectum were particularly accessible. Perhaps fifteen minutes were lost in attempting to replace the peritoneal stitches which had been torn out.

Parts Removed. The segment of gut measured $11\frac{1}{2}$ inches in length in the fresh state. Four and three-quarter inches of this was above the upper margin of the tumor. The specimen was given to Dr. J. A. Wilder, pathologist to the hospital, who reports as follows:

"The specimen consists of $11\frac{1}{2}$ inches of rectum with surrounding tissue and lymph nodes. The lumen of the rectum is partially occluded by an irregular nodular mass that begins $2\frac{3}{4}$ inches above the anus and extends upward $4\frac{1}{2}$ inches, involving the greater part of the circumference of the gut, but being at all points well within the lines of incision. There are numerous lymph nodes in the connective tissue behind the segment of gut

above the mass, but no enlarged lymphatics are found near the upper end of the intestinal fragment. Microscopic examination shows the mass to be an adenocarcinoma. *The lymph nodes show cancerous invasion.*"

The patient vomited pretty constantly for 36 hours after going back to bed. Her pulse at the end of 30 hours was 108; it then dropped to 98. Forty-eight hours after operation her stomach was quiet and she was beginning to take nourishment. During the first 30 hours five pints of salt solution were infused.

The subsequent course was smooth. The median abdominal stitches were taken out on the seventh day, and at the same time the silk stitches fixing the gut at the site of the artificial anus were removed. The median wound had been kept clean and both wounds healed primarily. The bowels were freely moved on the fifth day. At no time was there abdominal distension. A part of the perineal packing was taken out on the fourth day, a little more each day thereafter, and on the eighth day chloroform was given when the vaginal and perineal stitches were removed and the high gauze packing, that which had held the gut in place, carefully taken out. The sacro-perineal wound closed down gradually and completely. The patient began to be up and about in the usual length of time. It is now six months since the operation. She has gained in weight and strength. The artificial anus behaves well; indeed, the fact that the woman satisfactorily pursues the occupation of cook in a private family would seem good evidence of this. The gridiron incision allows a fair "pinch" to the gut.

Discussion.

Dr. Rogers: I am very glad, Mr. Chairman, that I was able to see Dr. Powers' case when he operated on it, and afterwards, and the result is certainly eminently satisfactory.

It fell to my good fortune, through Dr. Robinson's kindness a year ago last January, to

have a somewhat similar case come into my hands. It was a man aged between 50 and 60, in whom the cancer came down very close to the anus and extended up so far that I could not define the upper limit. The question at once came up as to whether to perform a Kraske or go in through the abdomen. In consultation with Dr. Freeman and some other surgeons I decided that I would try the abdominal route. This was done January, 1902. I followed, in a modified way, the procedure that had been adopted by Weir of New York, who at that time had reported two cases. It is a modification of an operation devised by Monnsell of New Zealand. I did not follow either in detail. Before opening the abdomen I made a free opening into the rectal fossa, posterior to the anus, large enough to put in a very large drainage tube, so as to save time afterwards. I then opened into the abdomen, divided the peritoneum at the lower part and dissected, mainly with my fingers, the whole mass free. The mass was very large, much larger externally to the rectum than it seemed from the interior from below, and it extended up a short distance above the peritoneal fold. After isolating it completely I found that I had to go down so close to the anus that the division was practically at the inner sphincter. I dissected it free up to about two or three inches beyond where I thought the tumor ended, and there put on double ligatures. I then excised the whole mass, and proceeded to bring down the sigmoid end to the anus. This was the difficult part of the operation—the mesentery was so short and the attachment so tight that I found I had to dissect it off the sacrum by making very free incisions, and I feared that I was going to have trouble before I could bring it down to the anus. I was able, however, to free it completely and remove all tension. I had to remove altogether some seven or eight inches of the bowel. I then from above closed the wound in the peritoneal pouch. I had, of course, to remove a small quantity of the peritoneum, but I easily closed the pouch completely, leaving the peritoneal cavity intact. I closed the abdomen, and going below I brought the free upper end out of the anus, inverted the anus and sutured it in position. This suturing was difficult on account of the small margin at the lower end. There was only practically the walls and mucous membrane between the sphincters, and I had to practically suture

the upper end to the anus; but by means of my finger introduced through the first made wound I could invert it enough to put in the sutures. I then, of course, put drainage into the fossa, which now seemed to be a very large, free open space. I did not get union by first intention. There was a good deal of supuration and some of the stitches gave way; and for some time there was fecal fistula through the drainage opening. It healed slowly, however, and in about four or five weeks the man returned to Aspen and I have not seen him since. Dr. Robinson reports to me that he is now doing a man's regular work in the mines, and that he has practically a sound sphincter; that he considers him a man in average good health and is able to do the ordinary day's work.

Dr. Robinson: I have recently examined the case concerning which Dr. Rogers has spoken, and in conversation with him I find that he has almost complete control of the sphincters. At times he says he will have a little diarrhea and will have some involuntary discharge. I can find no tendency to a return, and he claims he is in good health. This case first came to me complaining of diarrhea. I prescribed for diarrhea, and I think in about a week he came back and claimed that the diarrhea was still bothering him considerably. I again prescribed, which seemed to have no effect, and when he came back the second time, in less than a week I think he again claimed that there was something he could not pass away. He had that continual desire for his bowels to move, and most of the time there would be nothing to pass. So I made an examination and found this condition which Dr. Rogers has described to you. I immediately sent him to Denver for operation, as I think the earlier the better.

Dr. Powers: I congratulate Dr. Rogers and Dr. Robinson on the results in their case. Such results in my case—an anastomosis, would have been impossible. But the interesting question is raised as to whether or not an anastomosis is desirable in the majority of these cases. The whole subject has been set forth in an admirable way during the last year by Abbe in the transactions of the American Surgical Association, and C. H. Mayo of Rochester, in the Journal of the American Medical Association. Mayo says that operations are tending toward the removal of everything from above downward, leaving the patient with an iliac or inguinal anus. If one

is to make his choice between a sacral anus and an abdominal anus the advantages are very much on the side of the latter. Mayo rightly says that hitherto the sacral anus has been given preference for reasons of sentiment rather than of practical utility. There is no comparison between the comfort which a patient experiences with an abdominal anus and one in the sacral region.

REPORT OF A CASE OF CONGENITAL DILATATION OF THE COLON; OPERATION, RECOVERY.

C. K. FLEMING, M. D., DENVER.

The case of congenital dilatation of the colon which I desire to report impresses me as of sufficient interest, on account of its successful termination, to warrant me in doing so. This disease has been described under various names, such as Mya's congenital megacolon, Hirschsprung's disease, and idiopathic dilatation of the colon. Dilatation of the colon may be either congenital or acquired.

The congenital form may be produced by a congenital narrowing in the descending colon, sigmoid flexure or rectum; malformation of the meso-colon, causing malpositions of the colon; or by faulty development or absence of the muscular coat of the colon, sigmoid or rectum. The acquired form may be produced by a variety of causes, such as chronic constipation, stricture of the rectum or anus, external pressure from tumors, atony of the bowel, etc.

This condition is not as infrequent as one would naturally suppose. In looking up the subject I was surprised at the number of cases which had been reported by various writers. The most recent report was made by Duval in the *Revue de Chirurgie*, last Index, No. 40, who collected 48 cases, presumed from the French literature. Griffith, in the *American Journal of Medical Sciences*, Vol. CXVIII, 1899, collected 49 cases from the literature and reported two cases of his own. Besides these two full reports,

cases have been reported at intervals in different medical journals.

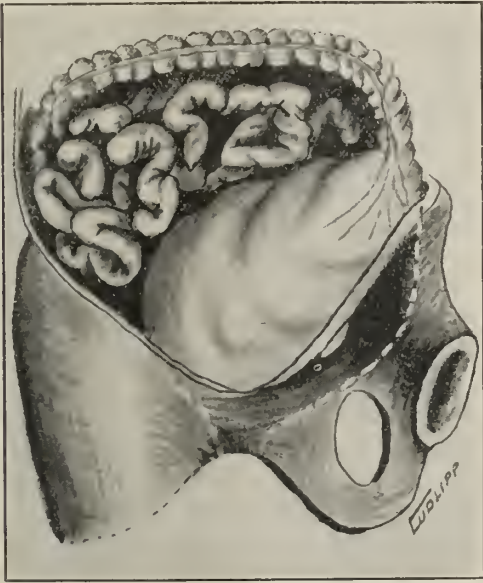
The report of the case which came under my observation is as follows:

Man, aged 25. Family history good. No serious illness, but had all his life been troubled with chronic constipation, which sometimes almost amounted to obstruction. He was eight days old when he had his first bowel movement. The second occurred when he was 80 days old. After this his bowels acted at more frequent intervals, and during his second year were practically normal except that enemas were always necessary, cathartics being of no avail. After his second year he began to have trouble again, and from that time until the operation, exceptionally did his bowels move oftener than four times a year, and then only by tedious rectal irrigation. Early in life his abdomen began to take on a peculiar shape, owing to the continual distention from feces and gas. This distention would increase until his bowels were moved, when enormous quantities of fecal matter would be washed away. At one time it is said 45 pounds were removed. Relief could only be obtained by the use of the rectal tube and prolonged irrigation.

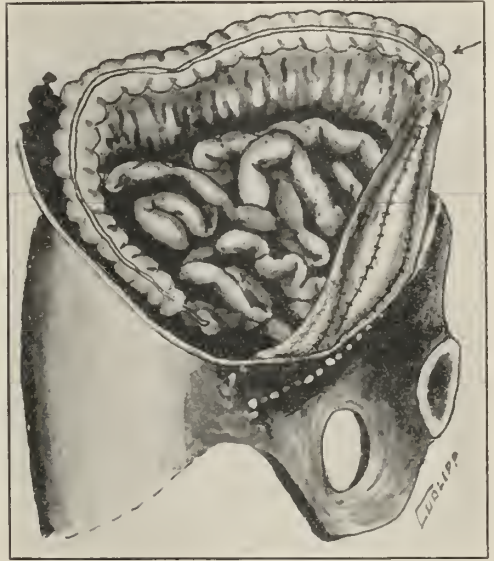
During all these years he had tried all sorts of cures, including drugs and daily irrigation. The former were inefficient; and the latter was followed by such exhaustion that it could not be continued. During the interval between movements he felt perfectly well and enjoyed a good appetite, but as the time approached when it became necessary to have his bowels emptied he would suffer pain from gas which could not pass off, and unless relieved the pain would become intense, associated with nausea and vomiting and great prostration. I saw him first in the above condition. The abdomen was greatly distended and the ribs and costal margins very much everted; in fact, the chest was barrel-shaped. The umbilicus

was prominent owing to the presence of a small umbilical hernia. An enormous tumor could be felt, which completely filled the pelvic and lower abdominal cavities as high as the umbilicus, extending higher on the left than on the right side. It was rather nodular and doughy. By rectal examination the large fecal

tack, if I may call it such, had been most severe, he consulted me in reference to a radical cure, if it were possible. I advised an exploratory incision and the performing of such operation as was found to be indicated. This he consented to after consultation with Dr. Leonard Freeman, with the proviso that nothing hazardous



Dilatation of the Colon. Before Operation.



After Operation. Showing Line of Sutures.

tumor could be readily felt, filling the pelvis. This examination was easily made, owing to the fact that his sphincter ani had been completely lacerated by a former practitioner, who had attempted to make a diagnosis by passing his hand into the rectum.

After determining the difficulty and giving a hypodermic of morphine to control the pain, the patient was sent to St. Anthony's Hospital, where, after repeated irrigation by a rubber tube attached to the water faucet and a long glass tube irrigator, the fecal accumulation was with difficulty removed. He made a rapid recovery and soon returned to his normal condition.

Owing to the inconvenience of his misfortune, and to the fact that his last at-

tack, if I may call it such, had been most severe, he consulted me in reference to a radical cure, if it were possible. I advised an exploratory incision and the performing of such operation as was found to be indicated. This he consented to after consultation with Dr. Leonard Freeman, with the proviso that nothing hazardous

should be undertaken. He therefore entered the Mercy Sanitarium and the operation was performed, with the assistance of Dr. Freeman, June 25, 1903. Prior to the operation his bowels had been thoroughly emptied by irrigation.

The Operation: The incision was made in the median line, from the pubes to the umbilicus. Upon opening the peritoneum, the large collapsed colon was readily found and delivered from the abdominal cavity, which was permissible owing to a long mesocolon. In color it resembled an ovarian cyst. Its walls appeared to be about one-fourth of an inch in thickness, perfectly smooth and free from adhesions. It was found to extend from about three inches below the splenic flexure to the anus, thus involving the great-

er part of the descending colon, the sigmoid flexure and the rectum. Its attachment to the pelvis was rather curious, as its peritoneal coat was reflected to the walls of the pelvis, almost to the height of the ilio-pectineal line, resembling strongly the broad ligaments of the female.

The bowel above the dilatation seemed to be perfectly normal except that the meso-colon was very long. There was not found any stenosis below. Three modes of procedure were considered for the best way of overcoming the difficulty, namely, the removal of the sac, the formation of an artificial anus and plication of the sac.

The removal of the sac was considered feasible owing to the long meso-colon of the transverse colon, but extremely dangerous on account of its broad peritoneal attachment in the pelvis. The formation of an artificial anus was thought to be practicable, but undesirable. Plication of the sac was deemed the least dangerous procedure of the three and offered a fair chance for a permanent cure. The operation consisted in plaiting the sac longitudinally from one extremity to the other. Seven or eight folds were taken altogether, being held by continuous chronic catgut sutures, which not only included the peritoneum, but also some of the thickened wall. After the folds were completed the sac was reduced in size to about four inches in diameter. Fearing that on account of its weight kinking of the bowel above might occur, the plicated sac was suspended at its upper extremity by a catgut suture to the abdominal wall. The abdomen was then closed, completing the operation.

The patient left the hospital in four weeks, notwithstanding the fact that his convalescence was interrupted by a severe attack of catarrhal pneumonia. While in the hospital the bowels were moved daily by enemas. A rectal tube was kept in place constantly to prevent the accumu-

lation of gas. The diet was mild and selected so as to prevent as much fecal matter as possible.

I am glad to report that the patient is greatly improved. His bowels will move by a cathartic, which was never possible before the operation, by small enemas, and not infrequently spontaneous movements have occurred.

So far as I know, this is the first time that the operation described has ever been performed for the relief of this condition, although I am well aware that a similar procedure has been practiced with success for dilatation of the stomach.

The two illustrations shown were made for me by Dr. Malcom Lloyd-Cudlipp from a verbal description of the case, and represent very well the conditions before and after operation.

Discussion.

Dr. Hall: I saw, through Dr. Fleming's courtesy, the operation which he did; and am very much pleased to know of the result. Some few months before this case was operated, I made a mistake in diagnosis in a somewhat similar case which I probably should not do again. It was a baby three months old which had never had a normal movement of the bowels. An uncle of the same child had once gone three months without a movement, and some other relative, the child's father or grandfather, had a similar experience. I had no doubt whatever of its being congenital dilatation of the colon. The child went rapidly from bad to worse and died. At the post mortem I found that the small intestine was the part affected. The small intestine was two or three times as large as the colon, the colon being entirely normal in shape, size and position. The small intestine was arranged in three great transverse folds, which could be seen before the child's death, crossing the central part of the abdomen. I think now I ought to have recognized it as the small intestine before the child's death occurred. Yet I had never heard of the congenital dilatation of the small intestine, and on looking the subject up in the text-books, I find that this condition is not mentioned, although I have not had opportunity to look up the matter thoroughly in the literature.

DIAGNOSIS OF GASTRIC ULCER.

By M. KLEINER, M. D., DENVER.

While no age is exempt from diagnostic import from the point of etiology, the frequency of gastric ulcer between the 20th and 40th years is marked, female cases predominating.

The history of trauma in the region of the stomach, heredity, certain occupations, especially the work of servant girls, tailors and shoemakers, the presence of associated diseases as anemia and cardiac and hepatic disorders, all aid in arriving at a diagnosis. The most important predisposing factor is gastric hyperacidity, with nutritional disturbance of a portion of the mucous lining of the stomach.

In typical cases of gastric ulcer the earliest manifestations commonly point to a subacute or chronic gastric catarrh, followed by the characteristic symptoms of pain, vomiting and hematemesis. The pain is sharp, boring or burning, increased by food, either immediately or one to two hours after its ingestion. There are two points at which the pain is most intense: In the epigastrium and at the level of the tenth dorsal vertebra. In addition there are paroxysms of diffuse pain independent of the presence of food. There is slight distress almost always present in the intervals between the attacks.

The next most frequent and important symptom is vomiting; but unless the vomitus contains blood, macroscopically, it is of little diagnostic value. Nausea and eructations of acid food often precede the emesis, which occurs about two hours after eating, at which time the pain is at its height, and as a rule is relieved by the vomiting. In most instances the vomitus contains an excess of hydrochloric acid.

The third diagnostic symptom, hematemesis, occurs in about 50 per cent of cases. This symptom alone is frequently sufficient to base a diagnosis upon, as the vomiting of large quantities of unaltered blood

is certainly characteristic of gastric ulcer. Occasionally the slowly oozing blood intermingles with the gastric juice, is converted into hematin, and resembles coffee grounds. Tenderness on pressure is of diagnostic aid if it is in a circumscribed epigastric area, so that a finger tip almost covers it, or a tender spot to the left of the eleventh or twelfth dorsal vertebra. The simultaneous occurrence of epigastric pain, vomiting and hemorrhage renders the diagnosis of gastric ulcer reasonably certain. The absence of some of these symptoms or the presence of others makes the diagnosis in not a few cases impossible, and in a great many instances requires prolonged observation and study.

The most important gastric diseases from which gastric ulcer must be distinguished are hyperchlorhydria, gastralgia, subacute and chronic gastric catarrh and carcinoma.

(1) In hyperchlorhydria the pain is diffused, not localized, and is relieved by food, alkalies and lavage.

(2) Gastralgia offers the most difficult problem because it is found not only as a symptom of ulcer, but as a manifestation of a functional neurosis independent of organic disease. Hematemesis is absent, circumscribed tenderness is wanting, the attack occurs more frequently when the stomach is empty, is relieved by food and is not increased by external pressure. The history of freedom from distress between the attacks, the lessened interference with nutrition, the lack of hyperacidity of the gastric juice, all associated with neurasthenic and hysterical symptoms and neuralgia in other regions, aid us in reaching a conclusion.

(3) In subacute and chronic gastric catarrh the pain is less severe and the tenderness is diffused and not increased by pressure. Vomiting is infrequent and if hemorrhage occurs the quantity is very small. Gastric analysis shows that hydrochloric acid is diminished or absent.

(4) In carcinoma we have the presence of a tumor in a majority of cases. The age is forty years or more. Vomiting occurs late in the disease and is similar in character to that of a dilated stomach. Hematemesis is frequent but not profuse, and coffee grounds in appearance. Free hydrochloric acid is frequently absent in cancerous dilatation, and lactic acid present upon analysis of gastric contents. As a rule, the great emaciation and cachexia are incompatible with the gastric symptoms. In those cases of cicatricial pyloric contraction, with the formation of a palpable tumor, a differential diagnosis is impossible when it is recalled that a cancer may develop upon the site of an old ulcer; and hence hyperchlorhydria may exist, as in ulcer, instead of absence of hydrochloric acid as is usual in carcinoma.

(5) In ulcer of the duodenum the pain is to the right of the epigastrium, coming on two or three hours after eating. Boas states that the vomitus is alkaline in reaction, contains bile and digests fibrine. The gastric crises are of extreme violence, the intestinal hemorrhage sudden and preceded or followed by hematemesis.

Gall stone colic begins abruptly, continues longer, and suddenly ceases. The swelling and tenderness of the liver, the enlargement of the gall bladder, if present, the icterus which may occur subsequently, the lack of hyperacidity in the vomited matter, are of value in diagnosing this condition. The writer recalls a case seen in consultation in which a diagnosis of biliary colic was made, which was changed within twelve hours from the onset of the attack to a general septic peritonitis from a perforated appendix. In conjunction with other symptoms the point of greatest tenderness was situated in the classical appendiceal region. The autopsy revealed a perforation in the anterior wall of the stomach, from an old

gastric ulcer. It is well to remember in the absence of any previous history that a sudden gastric ulcer perforation, rapidly fatal, can simulate a biliary colic and later on a perforated appendix.

The gastric crises of certain spinal affections, particularly locomotor ataxia, may be misleading; but the Argyll Robertson pupil and the lost knee jerk will make the differential diagnosis.

Chlorosis with dyspepsia and hemorrhage makes the determination of an ulcer quite difficult. The absence of localized pain, the vomiting without reference to the taking of food, the occurrence of sudden hemorrhage as the first gastric symptom, all point to vascular congestion of chlorosis rather than erosion of ulcer.

But brief reference has been made to the details of the gastric contents. Repeated chemical and microscopical examinations, properly interpreted, offer invaluable aid to a final diagnostic conclusion, in association with the other symptoms.

THE MEDICAL TREATMENT OF GASTRIC ULCER.

By E. P. HERSHEY, C. E., M. D., DENVER.

If we had before us the combined opinion of all practitioners of medicine, particularly those experienced in diseases of the stomach, there would stand out before us one particular feature in the treatment of ulcer that is absolutely essential to recovery—physical rest. The numerous remedies advised in the medical treatment of this disease are enough to suggest that medicines given for constitutional effect are of little avail.

The pathology of the disease guides us in our treatment, which must essentially be local. The action of the gastric juice upon the ulcerated surface must be prevented, while at the same time nutrition must be maintained; therefore added to the important feature of rest, must be dilu-

tion of the gastric secretion and rectal feeding.

Unless proper attention be paid to inhibiting the action of the gastric juice upon the surface of the ulcer, it would be better that the patient be allowed some form of food, thus accomplishing its dilution. If oral feeding be unavoidable, milk, diluted with lime water, or preferably with milk of magnesia, is unquestionably the only substance that should be given. Complete rest for the stomach, even excluding milk, is of paramount importance. In extreme thirst, small particles of ice may be swallowed, but even this should be limited, as the presence of fluid in the stomach starts the flow of gastric juice by reflex action.

For the local treatment of gastric ulcer, nitrate of silver is the most valuable remedy. Administered by the mouth in capsule or pill the remedy becomes inert, as the salts of silver are decomposed in the presence of hydrochloric acid or sodium chlorid. A single washing of the stomach with a 1-1000 solution of nitrate of silver is more efficacious than the administration of the remedy for weeks. It is for the physician to determine the cases where lavage is permissible. The utmost caution must be exercised during the process lest hemorrhage be induced. The danger from hemorrhage does not lie so much in the presence of the tube, nor in the filling of the stomach with the solution, but rather during the process of removal or during syphoning. Should the opening in the tube come in contact with the ulcer, suction may draw the surface of the ulcer within the tube, and laceration will occur. This may be obviated by a knowledge of the exact location of the ulcer. Occurring as it usually does on the lower surface or within the greater curvature of the stomach, before syphoning out the solution, the patient should be directed to lie upon the left side, and the tube withdrawn three or four inches before starting the

return flow. After the 1-1000 solution of nitrate of silver (using at least 500 c.c.) is run into the stomach, it should remain there from one to three minutes, the patient in the meantime rolling from side to side turning completely around, and for a moment the hips raised about two feet from the bed, thus insuring contact with all parts of the gastric mucous membrane. This is the method of treatment par excellence for gastritis, which is present more or less in ulcer of the stomach. After the application of the silver solution, copious lavage with sterilized water should be used, and continued until all opaqueness of the water disappears. In cases of chronic gastritis with ulceration, there is no wash that equals a 1-1000 or even 1-500 solution of chromic acid. This remedy may be administered cautiously by the mouth, there being no time at which it cannot be administered, and its action seems beneficial through the whole of the alimentary canal. Too large doses will be evidenced by nausea and purging.

In severe forms of ulceration where local applications cannot be resorted to, copious draughts of slippery elm water, holding a chemically pure subnitrate of bismuth in suspension, should be given at frequent intervals.

The treatment of gastric ulcer is one that requires the most careful study by the physician. Everything lies in the technique as to the local treatment, and the proper rectal feeding. In summing up we have the following as our guide: Rest in bed, rest for the stomach, dilution of the gastric secretions, and local applications to the ulcer.

Two complications of gastric ulcer may at any time be met: Hemorrhage and perforation. The former if not fatal usually stops itself. If persistent small hemorrhages, then ice bag to epigastrium and ice by the mouth, large pieces without sharp edges being swallowed at close intervals. Intracellular injections of ster-

ilized gelatine solution, and adrenalin chlorid in 15 to 20 drop doses by the mouth.

If perforation—the surgeon.

SURGICAL TREATMENT OF ULCER OF THE STOMACH.

By EDMUND J. A. ROGERS, DENVER.

Conditions associated with or dependent upon ulcer of the stomach which demand surgical interference, may be summarized into the following groups:

1st. Those cases in which there is a persistence of symptoms, due to an ulcer, causing increasing debility, such as profound anemia, constantly recurring hemorrhage, distressing pain or pronounced dyspepsia.

2nd. Severe persistent hemorrhage with repeated exacerbations, not so great as to absolutely prostrate, but so great as to threaten life by its continuance.

3rd. Cicatricial contractions resulting from the healing of ulcers and leading to contraction of the pylorus and consequent dilatation of the stomach, or to hour-glass or other disabling deformities.

4th. Disabling adhesions about the stomach leading to its disability.

5th. Abscess, often resulting from slow perforation with adhesions, and generally sub-phrenic in location.

6th. Perforation.

In the first group of this classification, we attain the most satisfactory surgical results. In these cases, without treatment, the mortality due to the condition, appears to be about 30 per cent, while under proper operative procedure the mortality is reduced below 5 per cent.

It is impossible in a paper limited to ten minutes, to go fully into the details of all the indications and all the procedures that may be resorted to, but I shall attempt to summarize in as brief and concise a way as possible, what may be done under these conditions.

In this group much can be done for the relief of the patient by medical treatment, but even with the best results under medical treatment, great disability, with often almost chronic invalidism, is to be expected, so that in that class of people who have to depend upon their daily work for their existence, surgical interference is much to be advised. But in no case should operation be hurriedly undertaken, but only after due consideration and careful preparation.

The stomach should be carefully cleansed, and then put in a condition of physiological rest, so that when operation is undertaken, it will be found in the most promising condition for repair. Ochsner's name, more than that of any living surgeon, has become closely associated with this treatment by physiological rest through careful attention to lavage, purgation and rectal feeding. By this means the stomach is emptied and kept inactive, so that congestion is lessened, contraction allowed and all symptoms diminished.

In the majority of cases in this class in which operation is decided upon, the procedure will be necessarily exploratory, as the symptoms are not generally sufficiently marked to enable positive location in diagnosis. At first thought the theoretical operation would seem to be the excision of the ulcer from the wall of the stomach, but experience has proved that while this is sometimes a desirable procedure, it alone seldom leads to satisfactory results. And the reason of this, on mature thought is very apparent. A gastric ulcer is always the result of certain chemical or anatomical conditions of the stomach. The simple removal of the ulcer does not alter these conditions, while it leaves a vulnerable area at the seat of operation. Something more, then, must be done than the simple removal of the ulcer, even when this is advisable. On the other hand, the location of the ulcer, even after the exposure of the stomach, can only be made in a small num-

ber of cases, and then it is often in a location difficult to reach, or practically inaccessible.

In performing the operation, a central incision from the ensiform appendix down almost to the umbilicus, is, in the majority of cases, the most advantageous one. Occasionally, but not often, it will be found necessary to make a second incision at right angles to this, over the pylorus. By this incision the whole normal stomach can be brought into view, and its anterior wall, if there are no adhesions, easily examined. Indeed, adhesions on the anterior surface are not so common as upon the posterior surface. The location of the ulcer can often be made by the puckering of the serous membrane over a thickened area, marking the base of the ulcer. Occasionally we find the ulcer surrounded by adhesions, and a more or less extensive perigastritis. If the ulcer is distinct in its location, it may be excised by an elliptical incision, the line of which shall be transverse to the length of the stomach, as, by this means, bleeding, always apt to be profuse, is lessened, and the narrowing of the stomach by too great cicatricial contraction avoided. But it is now generally conceded that this procedure alone does not answer, and of the many further operations that may be performed, gastro-jejunostomy is the one almost universally advised. Gastro-jejunostomy may be performed either by an anterior or posterior anastomosis. Of these the anterior is much easier to perform, while the posterior, if properly performed, gives the most satisfactory results with less risk of difficult complications. It would undoubtedly seem advisable, in all cases where the inexperienced have to undertake the operation, for them to select the anterior attachment. To do this the omentum, with the transverse colon, is carefully turned up and the beginning of the jejunum is found, and the bowel followed down for about two feet, as this is

about the best length for the loop. A shorter length than this is apt to constrict either the small bowel itself or the colon as it passes over it, and lead to disastrous complications. If, on the other hand, the loop is long, we are apt to have gravitation lead to the accumulation of its fluids, and consequent dilatation and obstruction. Direct anastomosis undoubtedly gives better results than any other means, as an opening large enough to be free from the danger of too great contraction can thus be made and the direction and shape of the opening satisfactorily arranged. There can be no question, however, that where the condition of the patient demands haste, or where the operator doubts his dexterity, that the Murphy button is the best of the mechanical means yet devised. The results from Mayo Robson's bobbin are perhaps as satisfactory as those from the Murphy button, but its use does not shorten the operation.

The great point in performing the operation is to avoid the occurrence of the so-called vicious circle. By this is meant the flow of the bile and pancreatic fluids from the intestine into the stomach through the fistula, causing great irritation, and the entrance of the stomach contents into the upper loop of the bowel, instead of into the lower, and there accumulating and decomposing. This complication is the most frequent cause of death after these operations. The main points to be observed in avoiding it are, first, the arranging for the continuous peristaltic wave. Peristalsis in the stomach is from the left to the right, and the bowel must be so arranged that on its attachment to the wall of the stomach the wave does not move to the left and so become suddenly reversed; and secondly, the avoidance of the formation of a valve at the seat of attachment which might direct the flow in the wrong direction. In order to avoid this, it is well that the bowel be attached

for a short distance to the wall of the stomach, so that there will be no abrupt plication.

In the posterior anastomosis there is less danger of this complication (vicious circle), as there is less looping and folding of the intestine which is then attached to the wall of the stomach, with which it is in close relationship. To perform the posterior operation, the stomach, omentum and transverse colon with its mesentery, are drawn upwards, and an opening carefully torn through the meso-colon exposing the underlying upturned posterior surface of the stomach. The borders of this opening may be stitched back to the stomach wall, so as to avoid their contraction, and anastomosis between the upper portion of the jejunum and the stomach carefully made. This operation, it can be easily seen, disturbs the anatomical relationship of the parts to a very much less degree than does the anterior, but the fact of its being so much more difficult in its performance favors greatly the choice of the anterior operation. In performing either operation, the contraction of the stomach ensuing on free drainage, must always enter into the calculation of the arrangement of the parts. As has already been said, the establishment of this anastomosis leads in a vast majority of cases to eminently satisfactory results, and as it is attended by no great difficulty, it is generally the operation to be advised.

In the second group—severe persistent hemorrhage—the operation is of course only undertaken as an immediate life saving process. It is never advisable to operate after prolonged hemorrhage, unless the life of the patient is in imminent direct danger from loss of blood. If the bleeding can be checked by medical means, that should certainly be resorted to, and a favorable occasion for operation awaited. This, of course, would transfer these cases to the first group. During the process of the hemorrhage, it is usually found most

difficult to locate the seat of the bleeding. It may occasionally be advisable to excise an ulcer on the anterior wall, and very rarely advisable to open the stomach by a free transverse excision to explore its interior and locate the seat of hemorrhage; but the patient is as a rule in too critical a condition to permit anything of this kind being done. It is found, however, that the performance of a gastro-enterostomy, and the consequent rest of the stomach, nearly always leads to the checking of the hemorrhage and the healing of the ulcer. In those cases where a large vessel has been cut into and the stomach can be reached early enough to promise some success, it may be necessary to doubly ligate even the largest arteries of the stomach; and such a measure would always be justifiable in a life saving attempt.

In the third group of cases a great variety of operations may be demanded, as contracted deformities often lead to great anatomical defects. Contraction about the pylorus is of course the most common. These contractions are made up generally of cicatricial tissue; and cicatricial tissue is never a satisfactory tissue to operate upon. In some cases where there is an annular constriction of the pylorus, a pyloroplastic operation may be performed. These cases, however, are exceptional. In a great majority of cases the gastro-jejunostomy, already described, is the most satisfactory operation. Stretching operations, or pylorotomy, seldom lead to the satisfactory results that have been obtained by the simple anastomosis. A great variety of plastic operations have been performed, one of which may occasionally be demanded; but we have not space here to consider them.

In the fourth group, no rule can be laid down. Adhesions are usually on the posterior surface of the stomach; it is sometimes attached to the pancreas or the gall bladder, or to any of the neighboring

structures. All that can be said is that when, on exploration, the disabling deformity is made out, a procedure must be adopted on general lines that will remedy it.

Very much the same thing must be said about the fifth class. The same precautions must be taken in opening a subphrenic as in opening any other abdominal abscess; and drainage must be carefully established until sufficient repair has taken place to enable us to perform a secondary operation, should it be demanded.

In the last group come a great number of cases in which the surgeon is called to find the patient in collapse due to perforation. An early diagnosis and operation would, in a great number of cases, have avoided this terrible accident; but when it has occurred, the chance of recovery for the patient depends upon prompt, energetic action. In cases of profound collapse, a short delay may be justifiable; but every moment's delay lessens the chance of recovery in a patient. That there are rare cases in which recovery does take place after perforation, without operation, is no argument against operation, for the chance of recovery is small without it. As a matter of general prognosis, a posterior perforation, of course, gives a much better outlook than an anterior perforation. On the other hand, in an anterior perforation the ease of operation is so much greater, that if performed very early success is more to be expected. The only rule that can be laid down for the operation is to open the abdomen in the way already described, carefully search for the seat of perforation, and when found, close it. Of course the ordinary rules for cleansing the peritoneum hold good here as elsewhere; nor can any definite rule be given as to the best way to close the perforation. It is not generally deemed necessary to excise the ulcer, it being generally advised that the best procedure is to fold in the injured area and

adapt the serous surfaces about it. In these cases, of course, the condition of the patient demands that time shall be one of the most important elements in directing the mode of operation.

ETIOLOGY AND DIAGNOSIS OF DILATATION OF THE STOMACH AND GASTROPTOSIS.

J. E. KINNEY, M. D., DENVER.

For a definition of dilatation of the stomach I will refer you to some of our greatest clinicians on this subject:

Pepper defines it as an abnormally great and chronic enlargement of the stomach, with interference with the digesting and propelling power of its walls. When the stomach is simply unusually large, but unattended by characteristic symptoms, we have to do with megastria, which is a condition, not a disease.

Hemmeter—"There is no uniformity in the classification of the various forms and degrees of abnormal enlargement of the stomach. The defective function in these cases is not commensurate with the size and capacity, *but with the tonicity of the peristalsis*. A very large stomach (megalogastrica) may have a perfect motor function, and a very small stomach may have a defective motility. It is impossible, however, to invent a term which shall comprise the important features of all types of motor and mechanical insufficiency. Probably as clear a classification as any is one based on Riegel and Boas as follows:

1. Simple gastric atony or motor insufficiency or myasthenia without dilatation.

2. Atonic dilatation (motor insufficiency due to relaxation of the gastric walls) without pyloric stenosis.

3. Secondary dilatation (motor insufficiency due to pyloric stenosis). The one common sign is not the retention of food, but impaired motility. No matter where

a stomach may be located, within the abdomen or how large it may be, it does not become abnormal until the motor function is interfered with."

Einhorn simply says:

"A very large stomach causing manifest digestive disturbances is generally spoken of as a dilated stomach (dilatation of the stomach, gastrectasia). The most extensive degrees of gastric dilatation are found in cases of obstruction of the pylorus."

Musser—"Dilatation of the stomach is caused by obstruction at the pyloric orifice, either from cancer, the cicatrix of an ulcer, or fibrous stricture. It follows atony and degeneration of the walls of the stomach which occur in the course of chronic gastritis. It may attend paralysis of the stomach. Excessive eating or drinking are the only probable causes independent of organic disease."

Ewald says: "I understand dilatation of the stomach to be that condition of the viscus which is accompanied by the clinical symptoms of disturbed gastric function due to the enlargement of the organ, and megastria to be the acquired or congenital large stomach, the abnormal anatomical state of which is functionally compensated."

Dilatations of the stomach are produced by two etiological factors: (1) Mechanical stenosis of the pylorus. (2) Absolute or relative weakness of the expulsive forces (or in other words, atonic conditions of the muscularis). We can only speak of an absolute dilation when it exceeds the given capacity in round numbers of 1,600 to 1,700 c.c. (53 to 57 fluid ounces)."

Boas says the word ectasy, or dilatation of the stomach, should be dropped because its employment is not justifiable in the light of our present knowledge.

Bouchard's definition is: "Every stomach which is not retracted when empty is a dilated stomach. Dilatation is not dis-

tension. A dilated stomach is a stretched stomach, the cavity of which is apparent only when it is empty, because though its walls then touch each other, it is no longer capable of diminishing its size by retraction. I still admit, through courtesy, that it is necessary to perceive the splashing below the middle of a line drawn from the umbilicus to the point nearest to the border of the left costal arch. But in reality this line is of little importance."

Mathieu endorses this with some modification, as follows: "Every stomach which does not empty itself is a dilated stomach."

My reason for quoting these authorities is not to call attention to the differences, but to indicate their agreement upon the most essential things concerning our subject, which are that no matter how large or how small the stomach is, it is not abnormal until its motor functions are interfered with; and that dilatation of the stomach is not a primary disease, but it is slowly developed as the result of many morbid processes. A fully developed ectasy, or dilatation, may be readily detected; but the general condition of the patient is more dependent upon the causes which have led up to it than upon the dilatation itself.

It becomes evident that what we should consider as most important is not the condition which has been produced, but the cause or causes which have led to the abnormal state, and study them carefully by learning the clinical history and observing the physical signs as revealed by a thorough inspection, palpation and percussion and the microscopic and chemical examination of the contents of the stomach, and also a thorough examination of all of the other organs. The physical signs may give a complete picture and enable us to make a correct diagnosis; but in order to give a rational prognosis and intelligently treat the case we must study the causation and also the functional condition of the stomach.

There are two general classes of etiological factors of dilatation of the stomach: First, by any mechanical obstruction at the pylorus or in the commencement of the duodenum, such as benign or malignant tumors, which by narrowing the exit, prevent the stomach from emptying itself into the intestine within a normal period. Dislocated kidneys, adhesions following peritonitis or operation, or acute inflammation producing ulceration and stricture near the pylorus, are also among the causes. The second class consists of a large number of factors which contribute to the atony and insufficiency. Some writers claim that a dilated stomach is inherited; but undoubtedly the great majority are acquired by pernicious habits of daily life.

The obstructive causes produce the greatest degrees of dilatation, but so great degrees are not found as formerly, because since Kussmaul demonstrated the efficacy of the stomach tube in relieving the distressing symptoms of this condition, earlier and more efficacious treatment has been given, which has prevented the extreme dilatation.

Many investigators think that the greatest percentage is caused by neoplasms; but if we take into consideration the milder cases which are just as truly atonic, then the number caused by mechanical obstruction is very small compared with the many which are induced by such habits as produce this atony.

Like every organ in the body, the stomach is physiologically capable of doing much more than is ordinarily required; but it is such a pleasure for the individual to keep it busy that he unwittingly, yet constantly, overtakes its capacity both as a receptacle, and also functionally. So among the chief causes are over-eating, excessive drinking at mealtime, drinking too much of alcoholic beverages, such as beer and ale, or the more concentrated

stimulants (which delay or inhibit digestion), eating habitually too large a proportion of or living exclusively upon a vegetable diet, particularly of living a too sedentary life. One of the most common causes which has come under my observation is habitual intestinal fermentation, with a constant large accumulation of gas stretching the intestine, interfering with or preventing peristalsis, which gradually retards the stomach from emptying itself in part or totally, for a much longer period than digestion should continue. This produces atony and insufficiency if repeated day after day.

Out of the last hundred cases which I have examined, there were over eighty per cent showing atony of the stomach muscles of varying degrees. Of these only twelve per cent were (so far as could be judged) from mechanical obstruction. It must be stated, however, that these cases were not selected from general practice, but came for examination for some form of digestive trouble.

Inasmuch as the digestive work is easily inhibited temporarily by such nervous phenomena as fear, fright, or excessive emotional display, it is readily seen how any permanent cause leading to neurasthenia may habitually influence the digestion by inhibiting the secretory and motor functions and so lead to atony. Among the causes are over-work or, worse still, over-worry, and eating when physically or mentally fatigued. These and many others are extremely important and need special study. Dilatation is a very frequent sequel of acute diseases such as typhoid fever, diphtheria and pneumonia, and a very constant element in tuberculosis.

Diagnosis: As will be seen by the foregoing, the diagnosis does not depend upon the size of the stomach or position of the lower border, though these may help to determine the degree of atony and insuf-

iciency. In advanced cases the diagnosis is not at all difficult, and with care the milder cases are readily recognized.

In the early stages, usually before the patient is aware of there being any gastric disturbance, the only sign which can be detected is the splashing sound; and when this is habitually found at a time when the stomach should be empty and retracted, we may be sure that there is atony and insufficiency. Also the reverse of this is true, that the constant absence of splashing at the time when the stomach should be empty, surely excludes motor insufficiency. Although many authorities say that these splashing sounds occur in healthy stomachs they are not habitually present, although they may occur at the end of the digestive period when a large amount of food has been taken; while in the cases of atony there is a splashing to be elicited till a considerable time after the digestion should be finished. Leube says that after giving a test meal and removing it after seven hours, the stomach should be empty. When a residue of food is found at this time it indicates a pathological condition. So in every instance where splashing sounds are habitually found, a thorough chemic and microscopic examination should be made; for even in the incipient cases this may enable one to accurately determine an abnormal condition together with its causation, as it certainly will in the more advanced cases. To determine the degree of insufficiency examine the contents of the stomach at different hours after ingestion. The location over which the splashing can be found helps to determine the size and displacement of the organ. If there is any doubt as to whether the splashing is in the stomach or colon use a tube and empty the stomach, and then if the sound is still heard it is undoubtedly in the colon; or we can distend the stomach with gas and then compare; and if this does not determine, have patient

stand and drink one or two glasses of water and then dilate the colon with air. The percussion note will show the boundary. But never rely upon one examination.

Dilatation may be accompanied by either a hyperchlorhydria or a diminished amount of hydrochloric acid or by any other chemical condition. It is of little value to estimate the chemical reactions of the stomach if we do not determine how well the organ is capable of emptying itself.

GASTROPTOSIS.

Gastroptosis, sometimes called Glendard's disease (he having first called attention to it in 1885), is a falling or pro-lapsed condition in which the stomach lies nearly transversely, and is usually accompanied to some extent by the other abdominal organs with which it is associated. The pylorus is usually in about its normal position on account of the fixity of the duodenum, the cardia may descend to a level of the body of the twelfth dorsal vertebra, and the lesser curvature extends across the abdomen. The stomach may be dislocated in three directions: Upward, laterally or downward. The first two are apt to be from abnormal pressures, as from tumors, or from other organs, as an enlarged liver or spleen; and there may be abnormal changes in shape, as the hour-glass contraction—but our subject deals only with the downward displacements.

Meinert found that out of fifty girls of from ten to fourteen years of age, nearly one-half showed dislocation of the stomach; and in his private gynecological clinic, he found abnormal positions in more than eighty per cent; while he estimates that in the male population there are only about five per cent. Slight degrees of gastroptosis are found in many instances where no symptoms exist; and in the severe cases there may be gastric atony and retention with all their symptoms, patients complaining of a sensation

of heaviness, which may disappear in a recumbent position. Vomiting is not infrequent and is usually very difficult, and if left untreated, the patient becomes weak, anemic, neurasthenic, depressed and irritable.

The causes of gastroptosis are numerous, though Glenard thought it chiefly due to the relaxation of the supporting ligaments, particularly the hepato-colic, and the non-support of weakened abdominal walls. Other causes are mechanical pressure from enlarged liver or spleen, or from a pleuritic effusion, or adhesions from the effects of any acute inflammation, constitutional defects such as abnormal formations of thorax and pelvis. In women a very important factor is compressing the waist by clothing and wearing it improperly supported.

The diagnosis is not difficult, though the condition is not revealed by percussion and palpation; but inspection will sometimes indicate its presence. Leube's method of introducing water into the stomach while the patient is in an erect posture will show the lower border, but will not demonstrate the lesser curvature, which with the position of the fundus determines the diagnosis. This can usually be done very well by gastric illumination (but as this requires special apparatus it is not a very popular method); or by inflating the stomach with air, or by giving an effervescent mixture.

Both of the latter methods have advantages and there are some objections to each. If the patient is familiar with the use of the stomach tube the insufflation with a double bulb has the advantage of being under better control, it can be done more slowly and so the discomfort or pain of sudden dilatation avoided, and when the examination is finished the air can be expressed through the tube. The production of gas by effervescing mixtures is more quickly performed and can be used without special

preparation or instruments, except that it is necessary to have a stomach tube at hand to use if there are any untoward symptoms. It is well for obvious reasons to become familiar with both methods.

The differential diagnosis is to be made from all other conditions and positions by outlining the position of the upper border of the stomach, though it must not be forgotten that gastroptosis may accompany any or all of the severe motor or abnormal chemical conditions of the organ.

MEDICAL TREATMENT OF DILATATION OF THE STOMACH AND GASTROPTOSIS.

W. T. LITTLE, M. D., CANON CITY.

The treatment of these two closely associated conditions hinges entirely on a correct diagnosis of the cause in each individual case. If the dilatation is due to a stenosis of the pylorus from whatever cause, then the removal of that cause relieves the stomach condition. Again if the gastroptosis is due to pleuritic effusion or peritoneal adhesions, to the dragging of an abdominal tumor, or other extraneous causes, the relief is suggested by the cause; and thus far the treatment is largely within the domain of the surgeon. The medical treatment here would be entirely symptomatic. It is the care of that large class of cases which for convenience we will term idiopathic, that will be considered in this paper. Before proceeding to the treatment of dilatation and displacement actually existing, it may not be amiss to refer briefly to the prophylaxis of these conditions, especially gastroptosis.

Strauss believes that in many cases there exists a congenital delicacy or fragility of the tissues (mesentery, ligaments, etc.) which, under strain and in the absence of support yield; and this is followed by displacement of all the viscera. Children with paralytic thorax, chicken breast, funnel breast, enlarged liver and

rickets should be treated with the utmost care. They should be made to lie down during a portion of the day and in some cases be given abdominal supporters to be worn while they are on their feet. In every case the greatest care should be paid to diet and general hygiene. Attention should be given to all persons, whether adults or children, after acute or chronic diseases associated with marked loss of weight or diminution of muscular tone. As the great majority of patients with gastroptosis are deficient in body fat forced feeding may be indicated.

Pregnant women should not be permitted to get up too soon after confinement; and after they are on their feet, a binder should be worn, if it is found that the abdomen lacks tone. The same precaution should be taken after the removal of large quantities of ascitic fluid or of large abdominal tumors. Corsets, tight belts and skirt strings should be forbidden. Rigel advises a reform corset with shoulder straps and buttons for attaching the skirts. When women insist on wearing corsets, the straight front corset, in which the pressure is exerted on the lower half of the abdomen, should be recommended.

As to the treatment proper of dilatation and gastroptosis, it may be divided into:

A. Treatment by medicines, diet and general hygienic measures.

B. Treatment by bandages, pads and supports of various kinds.

As the motor and secretory functions of the stomach are frequently impaired, these should be tested as the first step; and should there be a deficiency of hydrochloric acid it should be substituted in the usual doses following the taking of food. When the motor efficiency is impaired to the extent that a considerable residue remains long after the stomach should empty itself, lavage is indicated. I do not believe it is ever necessary to perform this oftener than once a day and the majority of cases will not require it at all

after the diet has been carefully regulated.

A half teaspoonful to a teaspoonful of artificial Carlsbad salts dissolved in a bowl of hot water, taken on rising in the morning, acts as an efficient substitute for the stomach tube, and should be given as a routine. It also tends to overcome the constipation usually present in these cases. Strychnine is probably the most valuable of drugs for its tonic effect on the muscular walls of the stomach, and should be given in full doses.

The diet is of the greatest importance and should be selected to suit the individual case. As a rule, in both simple dilatation and gastroptosis a plain mixed diet, not too bulky and so constituted that it is easily liquified and thus can be propelled into the duodenum in a short time, should be chosen. Thompson, in his *Dietetics*, recommends that the food be concentrated and small in bulk and that farinaceous food be almost wholly excluded. At first scraped beef, or a piece of broiled chicken, with perhaps a very little dry toast or toasted cracker. Small quantities of iced milk taken very slowly is all that should be given if vomiting is present. Later, if improvement has resulted, more latitude is permissible; and the food advised is lean meat free from coarse fibres, fresh vegetables, young peas, asparagus, tomatoes, dry bread; simple starches such as macaroni, tapioca, vermicelli; boiled or broiled oysters or fish, soft cooked eggs, orange juice and stewed fruits without sugar. The meals should be eaten with as little drink as possible, and between meals not more than a tumbler full of milk or water should be taken. Most forms of starchy food and sugar, potatoes, old peas, corn, beans and most fruits, are to be avoided; coffee and wines should be taken sparingly.

Massage is of value as an aid to the stomach in emptying itself, and to strengthen the stomach and abdominal

walls. It should be performed about three hours after each meal for ten minutes. The patient must lie on his back with knees drawn up and muscles relaxed, the stroking and kneading motions must be made over the stomach in the direction of the pylorus. The patient may be taught to do this himself although it can be better done by another. While writers differ as to the efficacy of electricity it is worthy of a trial. The faradic current is preferable and may be passed through the stomach walls by placing one electrode over the epigastrium, the other on the spine. Better results will be obtained, however, when the current is applied directly to the stomach wall. For this purpose, Einhorn has invented an ingenious electrode which the patient swallows. Thus far, I have omitted rest in bed, which in all severe cases of dilatation and gastroptosis should be insisted on as the very first step in treatment, for nothing so quickly relieves the neurasthenic condition so often present in these cases.

The mechanical treatment is especially applicable to cases of gastroptosis and consists of bandages and pads. Perhaps the most satisfactory is a well-fitting elastic bandage which exerts its pressure on the lower half of the abdomen, holding up the sagging organs. It may be held in position by perineal straps. Broad adhesive strips may encircle the abdomen and back, to answer the same purpose.

While much more might be said on this important subject, the brief time allotted to me compels me to close this paper, at the same time expressing an apology for the desultory manner in which I have covered the subject.

SIGNIFICANCE OF EPIGASTRIC PAIN AND TENDERNESS.

J. N. HALL M. D., DENVER.

Pain and tenderness are found in many gastric diseases. Their significance can-

not be appreciated unless we consider the other conditions which may give them, and the differential diagnosis.

The gastric diseases in which we find pain and tenderness are:

Gastric ulcer, cancer, hyperacidity, chronic gastritis, acute gastritis, gastralgia, gout of stomach, gastric crisis of locomotor ataxia and stenosis of pylorus.

Conditions to be differentiated are: Duodenal ulcer, intestinal colic, lead colic, hysterical flatulency, affections of the gall passages, pains of morphine habit, affections of the pancreas, hepatalgia, abscess of liver and other conditions of this organ, renal colic, appendicular colic and reflected pain from various organs, thrombosis of mesenteric vessels, aneurism of abdominal vessels, tuberculous peritonitis, old perigastric adhesions and epigastric hernia.

In the gastric affections mentioned pain is likely to be sharp and acute with any involvement of the peritoneal coat from any cause; and without such involvement in acute gastritis, in gastric ulcer, in gastralgia, gout of the stomach, gastric hyperacidity and the crises of tabes. It is less sharp and often really dull and aching in character in cancer, in stenosis of the pylorus and in chronic gastritis. Sharp pain is most constant in and characteristic of gastritis, tabetic crisis and ulcer. Yet in chronic gastritis in the neurasthenic and in cancer it may be exceedingly severe and persistent. Dr. Hawkins has recently opened the abdomen of a young woman in whom we found only a moderate pyloric stenosis and a chronic hemorrhagic gastritis, yet the pain and tenderness were so severe that we feared an ulcer or cancer; it was, in fact, the severity and persistence of these features that led to operation. In spite of the absence of hydrochloric acid in the stomach contents, we thought that ulcer might be present, possibly with adhesions in front of an attempted perforation. Like gastralgia it

was a nervous trouble more than an inflammatory one. Although the mucous membrane must have been much eroded to give rise to the repeated hemorrhages of from 8 to 24 ounces each, we could find nothing but a great congestion with dark, plush-like mucous membrane covered with bloody mucus. Prolonged search failed to show the slightest erosion.

The continuous pain of certain cases of cancer is sharp in character and does much to wear out the patient. Its persistence gives opportunity for the development of emaciation, glandular involvement, hematemesis, melena, tumor and the chemical features of the stomach contents, so that the diagnosis is not often long in doubt. The acuteness and brevity of the pain in acute gastritis, with the tenderness, vomiting and other features and without the severe shock of perforative lesions in this region, make the diagnosis fairly easy in most cases.

The pains of tabetic crisis and gastralgia are often not accompanied by tenderness, and may be relieved by pressure. The criteria for diagnosis lie in the irregularity of the attacks, the finding of other signs of tabes in the first case, and of the utter absence of anything but nervous pain in the second. In tabes it should be noted that the pain is often due to a sharp hyperacidity. In a recent case seen with Dr. H. R. McGraw, the attacks had long been treated as being purely gastralgie, by former attendants. Finding a total acidity of 85, with Argyll-Robertson pupils and absence of knee-jerk made the diagnosis plain. Relief was immediate upon treating the hyperacidity by alkaline lavage and the other measures usually adopted in this condition.

The pains of gastric ulcer are frequently very sharp. They may be indistinguishable from those of a high acidity, both being frequently relieved by the taking of food. Tenderness is more marked in

ulcer; and we should not omit to look for the tender region over the lower left ribs in the back. It is very distinctive at times. The vomiting and especially hematemesis are likely to clear the diagnosis in favor of ulcer. A superficial hyperesthesia is not uncommon over the epigastrium.

Gout of the stomach is so rare in this country that I have had no experience with it. A distinct and characteristic gout elsewhere which has receded coincidently with the gastric pain, would be requisite for the diagnosis. Tenderness is not of the nature to indicate a peritoneal involvement.

Occasionally hypertrophic pyloric stenosis causes severe pain, but not usually with tenderness. I feel sure that it was a minor feature in the case seen with Dr. Hawkins, just quoted.

Perforation of gastric ulcer or that occasionally seen with cancer shows the sharpest pain, and most acute epigastric tenderness. More significant are the shock and the serious, we may say, "peritoneal," look of the patient. One reasonably familiar with clinical appearances could scarcely fail to appreciate, in the first hour, the grave character of such cases. Yet the serious symptoms may be delayed half a day, as in a case recently seen with Dr. Crews. He had suspected a perforation of a gastric ulcer, in a girl who had been under his observation for two years on account of sudden acute pain, and watched anxiously for rise in pulse rate or signs of collapse for some 12 or 14 hours. Suddenly the pain was renewed with greater severity and with signs of collapse; and I concurred in the diagnosis of perforation. Dr. Perkins opened the abdomen and found many firm adhesions about an old ulcer, with much thickening and a perforation admitting the finger. Here as in some cases of typhoid perforation it seems probable that the tearing away of adhesions or the escape of a minute bubble of gas may have caused the first

symptoms, and the final complete perforation the more serious later ones. Thus in a fatal case of typhoid where severe pain occurred in the right iliac fossa, but no collapse nor leucocytosis developed, I found post mortem that two or three minute bubbles of gas were present under the peritoneal coat of the ileum in this region, although no complete perforation had occurred. I do not doubt the close association of these findings with the incomplete symptoms of perforation. I suspect that some cases go thus far and then recover, confusing us greatly as to their pathology.

The term *gastralgia* formerly covered all conditions not known to belong under some other definite heading. Out of this undefined mass of material we have, in the past 20 years, carved a number of definite diseases. Thus hyperacidity was probably always called *gastralgia* a generation ago, and gall stones not causing jaundice likewise. No diagnosis of *gastralgia* should be entertained until searching investigation has been made of all other known causes of epigastric pain. Relief by pressure of the abdomen is often to be noted.

To be differentiated from these gastric conditions we have:

a. Duodenal ulcer. The frequent severe attacks of pain, with hemorrhagic stools and perhaps hematemesis, without marked stomach symptoms, lead us to think of duodenal ulcer. The pain is often much more severe than in gastric ulcer, and more of the nature of the *gastralgia* of old writers. I have felt a tumor about such an ulcer which had existed for years, so marked that I felt certain it must be cancerous; yet the subsequent course left no room for doubt that it was purely from inflammatory thickening.

b. Intestinal colic. This is commonly excluded without difficulty by a consideration of its cause, the cramps and the diarrhoea and vomiting, often with re-

lief. There is no marked tenderness, and pressure may give relief. Doubtless a large percentage of the cases of so-called "colic" of our earlier years in practice were cases of catarrhal appendicitis. If they did not recover in 24 hours they were almost certainly of this nature.

c. Lead colic. The occupation or known exposure, flat belly, lack of rigidity, absence of tenderness or even relief by pressure, frequent history of previous attacks, lead line on the gums, wrist drop, pallor, hard pulse and the cramp-like exacerbations ordinarily make the diagnosis clear.

d. Hysterical flatulency. We sometimes see in neurotic women pain in the abdomen associated with flatulency, but generally without local tenderness coming on as a distinct and acute attack. It may be coincident with menstruation. The general neurotic aspect, preservation of character of the pulse, absence of fever, free passage of dilute urine, globus hystericus and possibly other manifestations of hysteria serve for its identification.

e. Pains of morphine habit. In those attempting to break a drug habit in which morphine or other preparation of opium is used, even occasionally in the codein habit, severe attacks of epigastric pain with little or no tenderness develop about the time that the drug is entirely cut off. Diarrhoea is common at this time. The anxiety of the patient for the drug which he knows will relieve him, the history of the habit, the previous constipation, and generally the direct statement of the patient serve for the diagnosis. The finding of hypodermic marks on the legs of a physician who kept the codein habit a secret from me once led me to a diagnosis of this variety of abdominal pain.

f. Hepatalgia. Neuralgia of the liver, like *gastralgia*, should be diagnosed with exceeding caution. Probably even then half the cases will prove to have an organic basis in gall stones or other gross

disease. The pain in young women of neurotic tendencies is suggestive.

g. We probably do not give sufficient consideration to the possibility of old adhesions about the stomach as a cause of pain and tenderness, but especially pain. In a recently reported case a minute "string" connecting the anterior stomach wall with the abdominal wall had caused the patient to use morphine for many years. Dr. Freeman recently operated upon a woman of 60, upon my recommendation, for symptoms which I shall detail under "diseases of the gall passages." We concluded that her pain had been chiefly due to the adhesions found connecting the gall bladder and the stomach at the site of an old perforation. She has had absolutely no pain since their separation by Dr. Freeman.

h. A minute rupture in the abdominal wall below the xyphoid appendix, with protrusion of the omentum, or of a small accumulation of fatty tissue, may suffice to make life miserable for the victim. Pain is much more prominent here than tenderness. Such a projecting mass should always be noted and carefully considered.

i. Renal colic.* "It may be almost certainly excluded by attention to the mode of origin of pain, its nature, and its transmission to the genitalia. Careful examination of the urine is of great assistance in many cases. In this connection we should mention Dietl's crises in movable kidney. The frequent presence of the palpable and tender kidney (even visible through the abdominal wall, as I have seen it) the free blood in the urine, sometimes with the crystalline sediment seen in renal colic, will assist in the differentiation."

j. Appendicular colic and reflected pain from various organs. "The possibility of pain in the epigastrium being reflected from the pleura, the lung, the uterus, the appendix, the ovaries or elsewhere

must be noted. One may even have the pain in the right epigastric region from a left pneumonia, as in one of my cases, probably owing to intercommunication between the nerves of the two sides. No diagnosis of epigastric pain is on a sure foundation until the chest has been examined. So common is this location of the pain in the first hours of appendicitis that even in the absolute absence of any direct evidence the appendix should be held under suspicion for a time. Appendicular colic is especially to be considered here."

k. Affections of the pancreas. "Disease of the pancreas may run to a fatal end without pain, as in cancer; but colicky pain is frequently present, especially in calculus, hemorrhage, gangrene or compression of the duct by tumor or otherwise. Fainting and collapse may occur, especially in hemorrhage. In cancer of the head of the gland, real biliary colic may be present from closure of the ductus choledochus. The term "celiac neuralgia," sometimes used in this connection implies that the celiac ganglion is involved by pressure or traction, as it probably is in many cases. [I quote from a paper recently read before Cheyenne, Wyoming, Medical Society.]

"In the acute diseases of this region the high location of the pain, its tremendous severity, the serious aspect of the illness, the extreme tenderness of the epigastrium, the occasional feeling of fulness at this point, with the history of the case should excite our suspicions of pancreatic disease."

l. Thrombosis of mesenteric vessels. The diagnosis of this condition can rarely be made during life. Obscure pain in the abdomen, with tenderness, obstipation and collapse, should at least lead to an exploration. Elliot saved one case by resection of the mesentery and intestine involved. I saw a fatal case of this nature at autopsy

this summer with Dr. Freeman. The patient's condition when seen had forbidden even an exploration.

m. Aneurism of abdominal vessels. Excepting in case of the aorta, the diagnosis is ordinarily impossible.

n. Tuberculous peritonitis. Pain and tenderness may be prominent symptoms. Finding a rolled up omentum, enlarged mesenteric glands, peritoneal exudate, continuous rise in temperature, a chronic course, and frequent tuberculous antecedents should lead us to the proper diagnosis.

o. Abscess of the liver and other conditions of this organ. Abscess gives rise to tenderness oftener than to pain. Both symptoms are more marked if the peritoneum be involved. Jaundice may be present. The pain and tenderness are generally greater to the right than in the center of the body. The liver is often enlarged. Gastric symptoms are often entirely absent. In one case Dr. Freeman removed a primary cancer of the left lobe of the liver which had given rise to pain directly in the epigastric region. We had each independently made a diagnosis of gall stones. The patient is now well after a year.

I have seen excessively sharp pain from the capsular involvement of the liver in lymphatic leukemia. Cancer and hydatid cyst may also cause it. The distinctly hepatic appearance of the case is ordinarily sufficient ground for excluding the stomach as a cause of the trouble.

p. Affections of the gall-passages. We finally come to the most important condition affecting the diagnosis of epigastric pain and tenderness. The remark of the surgeon Mayo to Dr. Ochsner seems destined to become as famous as that of one of the governors of the Carolinas to the other. Its essence is that if one will investigate all his supposed obscure stomach cases he will commonly find some disease of the gall passages which may be

remedied and the patient cured. I have recommended operation upon many such cases without a definite diagnosis, but have no reason to regret it.

Gall stone colic may be most severely felt in the epigastric region. Radiation of pain, frequent chills, severity of collapse, sweating and vomiting, appearance of jaundice, and occasional history of liver trouble preceding suffice generally for the diagnosis. The milder, nagging, continuous, nerve-destroying pain of gall stones, when a mild cholecystitis has been provoked, or other slow chronic inflammation in this region, is less likely to be correctly diagnosed. Many of the conditions are not due directly to the presence of the foreign body, but to the damage it has previously done. One must beware of looking too confidently for the actual *corpus delicti*, as is also the case in searching the stools for the stone after an attack of colic. In the latter case there may have been only a cholecystitis, or the stone may not have succeeded in leaving the gall bladder. In the former, the secondary inflammation provoked by the stone is all that remains of which we may find pathological evidence.

I have mentioned a woman of 60 operated upon for me by Dr. Freeman. She had a chronic gastritis, with much mucus and a greatly decreased acidity. She soon had repeated severe chills, the temperature reaching 103.5, jaundice, moderate tenderness in the epigastrium, but no great access of pain. As her white corpuscles increased to 11,500, we decided against any serious acute inflammatory process. Because of the failure of great increase of pain, which had been even more marked previously, we would not go further than to predicate some obstruction of the common duct. Operation on September 19th revealed a stomach deformed and distorted by an old ulceration, adhesions from which point connected with the gall bladder and kinked the common duct. We

learned after the operation that 30 years before she had had a serious illness lasting all summer, although she stated to me at first that she had had nothing of the kind. She probably had a gall stone which ulcerated through into the stomach or an ulcer of the stomach which contracted adhesions with the gall bladder, with subsequent cholecystitis and atrophy of that organ. A more exact diagnosis is not possible in many cases than we made here, but exploration reveals many conditions which are remediable.

"The change in character of the pain with a tendency to become less acute and colicky may indicate the passage of the stone, and the occurrence of an infectious cholangitis subsequently. Such a probable case I have recently seen with Drs. Weaver and Law of Greeley. The occurrence of temperature up to 101 degrees daily, with gradual subsidence of the jaundice and of the acute pain meanwhile and eventual complete recovery led us to this conclusion."

In a recent patient with acute suppurative cholecystitis operated upon for me by Dr. W. B. Craig at the Denver City and County Hospital, epigastric pain and tenderness, the latter most conspicuous over the gall bladder, high fever, with a leucocytosis of 25,000 and an absence of jaundice, led to a correct diagnosis, with recovery following the operation.

"The lesson we should draw from this brief study of epigastric pain is that careful observation of its nature is of the utmost value, and we are learning rapidly not to cover up this symptom with the hypodermic syringe until we have observed it closely."

THE SIGNIFICANCE OF VOMITING IN DISEASES OF THE STOMACH.

BY GEO. A. MOLEEN, M. D., DENVER.

Vomiting occurs as a result of antiperistaltic contractions of the stomach,

with contraction of the diaphragm, closure of the pylorus, etc. It may be direct or reflex, according to the exciting cause. In diseases of the stomach we have to do only with the reflex excitement of the center in the medulla, which originates in the irritation of the pneumogastric fibres supplying this viscus. The diagnostic importance and relation of vomiting, or rather the act of vomiting, to diseases of the stomach may best be shown by a brief review of the conditions in which it is most common.

Coley states in a recent article that in perforation of the stomach vomiting is a more important symptom than pain, and that it usually occurs within a period of two hours.

In ulcer it may occur immediately after the ingestion of food, when it is probably due to the increased instability and hyperesthesia; or if the contact of food with the ulcerated surface is the cause, one to two hours later, when it is accompanied by pain which disappears after the vomiting.

In dilatation it is not frequent, and occurs not after one meal, but several meals, or the meals of several days, therefore in large amounts, relieving the distress; and is probably the most important symptom of this condition.

The violent and frequent vomiting of the acute and toxic forms of gastritis are too well known to require further comment.

Vomiting is not a common sequence of the chronic varieties of gastritis; and when it does occur it is either immediately after or one or two hours after eating; or as in the chronic alcoholic form, it is most common in the morning, and consists usually of the undigested food of the day before; or if the stomach is empty there are usually large masses of mucus, sometimes mixed with bile.

In carcinoma vomiting usually occurs late; and it is more apt to obtain when the

cancer is situated near the orifices, and especially the pylorus. The late occurrence of vomiting when located elsewhere is probably due in most cases to the phlegmonous gastritis, of which a large percentage of cases are secondary to cancer. That cancer may exist in places other than near the orifices, without vomiting, is well shown in Riegel's case in which he diagnosed and localized a carcinoma in the greater curvature some seven months before, and there had been no vomiting up to the time of his report.

Pain accompanying the vomiting, and which is not relieved afterwards, is of considerable diagnostic importance, as is also the presence of dark disintegrated blood in the form of the well known "coffee grounds vomitus."

The vomiting of the gastric crises of locomotor ataxia deserves mention in that it occurs periodically, usually without nausea, and is constituted of the normal partially digested food.

In conclusion it may be said that vomiting, in so far as its significance in diseases of the stomach is concerned, is dependent upon:

First. Time, with reference to the taking of food.

Second. Frequency.

Third. Amount of vomitus.

Fourth. Character and constitution of the vomited material.

It must not be forgotten that neurotic disorders of the stomach may produce vomiting accompanied by pain and even, as in some reported cases, hemorrhage.

The character and constitution of the vomited matter, which is most important in connection with the significance of the act, will be or has been considered in another paper and has therefore been omitted.

INFLUENCE UPON THE STOMACH OF CERTAIN DISEASES ELSEWHERE IN THE BODY.

By F. G. BYLES, M. D., DENVER.

The physiologist and surgeon have within recent years done much to deprive the human stomach of its ancient honor of being the chief organ of digestion. The former has shown that probably less than one-half of the proteid portion of our food is digested there, and practically none of the fats and starches; and as our food should contain 15 to 16 times as much carbon as nitrogen, the stomach would, mathematically at least, be relegated to about a thirty-second place as an organ of digestion. The surgeon has gone further and proven by its removal that this organ is not essential to life; but its presence in our anatomy is, like the pocket in our trousers, only a great convenience rather than an absolute necessity.

Notwithstanding this comparatively humble position to which the stomach has been assigned by these gentlemen of science, the general practitioner and the diagnostician find in their daily visitations that the human stomach, like Hamlet's ghost, persistently refuses to be downed and still continues to assert its importance as a suitable subject for therapeutic medication. It is an organ always to be interrogated in our attempts to diagnose diseases elsewhere in the body. Not only does this motherly viscus often have troubles of its own, but on account of its central location, its abundant blood supply and its wonderful nervous distribution it always sympathizes more or less with the troubles of almost all the organs of the body. Diseases of other organs which interfere with the circulation may cause pathological changes in the stomach. In heart disease which causes venous stasis the gastric veins become the seat of con-

gestion, with consequent gastric catarrh.

Hepatic disease (cirrhosis) may cause portal congestion and gastric catarrh. The same is true of nephritis.

The prognosis and treatment of these cases is of course that of the disease causing the disturbance. On this account infusion of digitalis may, in some cases, be the best remedy for gastric catarrh. In diseases whose ravages are manifested chiefly in other organs, the stomach is markedly affected and requires attention. This is especially true in tuberculosis of the lungs. Oftentimes the gastric symptoms are the most prominent features. Loss of appetite, gastric catarrh and vomiting are of frequent occurrence in the earlier as well as in the later stages of the disease. Not infrequently the lung symptoms are so masked by the more prominent stomach symptoms that the physician is in danger of overlooking the former entirely, and so a man may die of consumption believing that his stomach is the principal seat of disease. Indeed, it is doubtful if we possess any remedies of any use in phthisis other than those which aid digestion; certain it is that our treatment of the great white plague will depend very largely upon the attention we give to diet and digestion. The patient should be warned against swallowing his sputum and carefully instructed as to the amount and character of food as well as the time and manner of taking. The physician should remember that his patient cannot improve on treatment that is repulsive to his stomach.

The sympathy of the stomach with disease elsewhere in the body, as well as general toxic conditions of the body fluids, is shown most markedly by the act of vomiting. Impressions are sent to the vomiting center, located in the medulla, from the brain itself and from the various parts of the body by the afferent nerves, chiefly the pneumogastric. From this center motor impulses are transmitted

to the muscles concerned in the act of vomiting. The influence on the stomach of the toxemias, as septicemia, uremia, chloremia and sewer-gas poisoning, is shown by the act of vomiting, and is probably due to direct irritation of these poisons on the vomiting center. The same is true of the vomiting caused by scarlet fever, diphtheria and yellow fever. The behavior of the stomach in these cases as well as in many cases of reflex vomiting from diseases elsewhere in the body, should serve to emphasize the importance of constant attention to this wonderful viscus—this index of health and disease.

INFLUENCE OF DISEASES OF THE STOMACH UPON THE NERVOUS SYSTEM.

By S. D. HOPKINS, M. D., DENVER.

All diseases of the stomach, functional or organic, have a certain amount of influence upon the nervous system through reflex action or autoinfection. The nervous symptoms are frequently the most prominent, overshadowing those of gastric origin, and as a result mislead the diagnostician.

The majority of the symptoms are subjective in character, e.g.—hyperaesthesia, anaesthesia, paraesthesia, pain in the epigastric region, spine, and headache. Associated with these are insomnia, vertigo, convulsions, and psychic depression. In every case of hysteria and neurasthenia a certain amount of gastric disturbance is found, and this is particularly true in the latter; therefore the diagnosis of nervous dyspepsia.

The theories which have been advanced in explanation of gastric and sympathetic headaches are that the peripheral irritation is manifested in the brain through the pneumogastric and sympathetic nervous system, and by the absorption of toxins. The pain manifests itself in the sensation of fullness or a constriction

about the head, and is increased by the use of stimulants. The pain may be unilateral or limited to the vertex, and may appear immediately after eating; although at times it manifests itself in the morning shortly after arising.

Vertigo of gastric origin is rare, only 5 per cent of all the cases where giddiness is present being due to some disturbance in digestion. The diagnosis of vertigo due to disorders of the stomach can only be made after excluding all other causes for this symptom. The vertigo of gastric origin appears more frequently when the stomach is empty, and is not accompanied by pain or loss of consciousness. Gowers says: "I do not think it is quite certain that there is such a thing as definite vertigo of purely gastric origin. Thirty years ago 80 per cent of cases of giddiness were supposed to be due solely to the stomach. But we now know that in 90 per cent of the cases of definite giddiness a morbid state of the labyrinth is the real cause of the vertigo. It is possible that in the small remainder of apparently gastric giddiness there is some other influence that is the real cause, e.g.—a morbid state of the semicircular canals causing no auditory symptoms, and so not to be detected save by its effects."

The effect on the brain of gastric irritation or the absorption of toxic materials is to cause a cessation of healthy nutrition, which leads to a condition of excessive cerebral excitability. The oxygen of the blood is not held long enough by the brain cells, but unites with the oxidizable elements of the brain, thus producing insomnia. In children the disturbance in sleep is noted in the form of night-terrors and is often one of the symptoms of nervous dyspepsia. Tetany occurs in dilatation of the stomach with continuous secretion of the gastric juices, and for years it was thought that it only occurred in this condition; but Nothnagel reports two cases of carcinoma of the pylorus in

the early stages that died from tetany. The appearance of tetanic symptoms in diseases of the stomach must always be considered as a dangerous complication. In 30 cases in which it appeared 19 cases died.

In many cases of epilepsy an exciting cause may produce the first fit, particularly if there is a general retardation of development. Infantile convulsions frequently result from overloading the stomach, and in the adult convulsions may occur from organic or functional diseases of this organ. If these convulsions continue for any length of time they may become distinctly epileptiform in character, especially in persons who are predisposed. Indulgence of epileptics in indigestible foods frequently increases the number and severity of the attacks through reflex action or autoinfection.

Klippel* reported five cases of carcinoma of the stomach with multiple neuritis, three of which were examined anatomically. In two instances there was degeneration of the peripheral nerves, with changes in the musculature." A number of other cases have been reported with autopsy. It was found that the nerve trunks were intact whereas the peripheral nerves were involved. This is probably due to a disturbance in the circulation and nutrition of these structures. The inflammatory and degenerative diseases of the spinal cord are frequently produced by various intoxications. In diseases of the stomach, particularly carcinoma, I think there is no reason why the toxins should not have the same effect upon the cord as those produced by the infectious fevers, although I am unable to find any such case on record. A case of carcinoma seen at St. Anthony's hospital, Denver, Colorado, presented many of the typical symptoms

*Des amyotrophies dans les maladies générales chroniques et de leurs relations avec les lésions des nerfs périphériques. Thèse de Paris, 1889.

of locomotor ataxia; e. g.—loss of knee jerks, slight ataxia, girdle sensation, incontinence of urine, and disturbance in sensation. The sharp shooting pains and the pupillary signs were absent.

In many of the functional and general diseases of the nervous system gastric disturbances cannot be ascribed as the chief cause, but simply as an indirect factor in aggravating the neurological symptoms. This is especially true in chorea, paralysis agitans and exophthalmic goitre.

Absorption of toxic substances may cause delirium, stupor and coma; these symptoms are more frequently seen in the later stages of carcinoma of the stomach. The products of gastric fermentation have a depressing influence upon the mental condition of an individual, and in persons predisposed to mental derangement they may excite an attack of insanity. The most frequent form of insanity produced by the action of these toxins is melancholia, although other forms of mental disturbance may be attributed to the same cause.

DISEASES OF THE STOMACH IN CONNECTION WITH THE EYES.

BY GEORGE F. LIBBY, M. D., DENVER.

In selecting at random one hundred consecutive ophthalmic cases showing errors of refraction, I find fifty complained of headache unassociated with nausea, ten were subject to headache and nausea combined, and three suffered from nausea alone. The nausea was only occasionally accompanied by vomiting; but when it was, the patient usually described his affliction as "sick headache," which, however, he rarely if ever associated with his eyes, but rather with stomach or liver. Symptoms of refractive error or muscular defect, as blurring of print, difficulty in threading a needle, burning lids or aching eyes, had caused an oculist to be consulted. In the ten cases suffering from nausea

and headache, correction of the refractive error gave relief in each case. Of the three cases troubled with nausea unassociated with headache, relief was obtained in two cases, the third case not reporting. Here then we find thirteen out of one hundred cases of refraction, or about 8 per cent, complaining of nausea as a symptom of eye strain, with reported relief from properly fitting glasses in twelve cases; a result of 92 per cent relieved. Of course the explanation of this relief lies in breaking up a vicious nervous reflex set up by the accommodation in its effort to overcome the refractive error.

Five years ago a patient came to me saying that his family physician and a specialist in diseases of the respiratory tract had both examined him carefully, but found no lesion to account for his nausea, indigestion, and resulting loss of weight and anemia. Tuberculosis was feared, and an out of door life in the Maine woods was urged. For some reason the patient decided to have his eyes examined before "taking to the woods." I found a low grade of hypermetropic astigmatism, which I corrected. From the first day of wearing the correcting lenses the nausea ceased, appetite improved, dyspepsia gave place to good digestion, assimilation improved, and in two months he returned to his business, a well man to all appearances. Now, after five years, he is still in good health. Inasmuch as leaving off his glasses causes a quick return of the old nausea and indigestion, I must believe, with my patient, that the correction of the refractive error is the most important factor in his case.

One who has done clinical eye work among the poor in the cities is struck by the frequency of phlyctenular keratitis and conjunctivitis in little children. On closely questioning the mothers of these patients, one is even more impressed by the fact that the dietetic basis of this disease is quite as important as the "strumous

diathesis." Almost invariably the children are given fried foods, fresh bread, pastry, cakes, candy and unripe or over-ripe fruits—the banana being the principal offender in the fruit line. Instead of milk they are supplied with tea and coffee in liberal quantities as a beverage, with scant use of good water, within or without. The mothers always give as their excuse for such feeding that the child has such a *poor* appetite that she must give it anything it *will* eat. Calomel and castor oil, together with persistent careful feeding, have done more to cure these eye affections than the local treatment, however necessary.

Optic atrophy following hemorrhage of the stomach presents a marked example of the effect of gastric disease upon the eye. Both eyes are affected in about 90 per cent of these cases of optic atrophy, the affection being unilateral in nearly 10 per cent of the cases. This atrophy, with resulting diminution of vision or blindness, is most common in the severe hematemesis of chronic alcoholism. It may also be caused by gastric ulcer or cancer of the stomach. In case of gastric bleeding from traumatism or surgical operation, optic atrophy and blindness rarely result, although there may be temporary impairment of sight. There must be actual disease of the stomach to cause a resulting disturbance so serious as atrophy of the optic nerve. The gastric mucous membrane is the usual seat of the hemorrhage, and the bleeding is spontaneous. Loss of sight may come at the time of the hemorrhage, directly afterwards, or in two to five days. Sometimes partial or almost complete recovery of vision occurs. Hematemesis is the most fatal to sight of any form of gastric bleeding.

There are many theories as to the connection between gastric hemorrhage and optic atrophy, and the cause of the latter following the former. Probably the explanation that conveys most to our minds

is that of disturbance of the circulation in the optic nerve and retina, and consequent interference with their nutrition, which had already become impaired by imperfect gastric digestion. Also we must not lose sight of the fact that grave disease of the stomach may be associated with disease of the ocular tissues, just as chronic nephritis is pathognomonic of arterial deterioration.

Other diseases of the stomach than those attended by hemorrhage do not seem to have the direct sequel of serious eye disease; but any gastric condition that interferes with assimilation and nutrition, affects unfavorably the eyes in common with other organs.

CARCINOMA OF THE STOMACH— EARLY DIAGNOSIS.

BY C. D. SPIVAK, M. D., DENVER.

There is not a shadow of a doubt attached to the assertion that the death rate from carcinoma in general and from carcinoma of the stomach in particular is steadily increasing. Whether the symptoms by which cancer of the stomach was known to make itself manifest have undergone marked changes during the last decade, or the more accurate post-mortem diagnosis and the accumulated clinical data have weakened the diagnostic importance of these symptoms, I do not venture to decide. But this much is certain, that with the increase of the ravages of cancer the symptomatology has changed its aspect. We no longer expect all cancers of the stomach to begin insidiously. Over 10 per cent of all cases manifest themselves in an acute form. That any one should have dared to assert that a malignant disease like cancer might run a painless course would have been looked upon some two years ago as a case of mistaken diagnosis. Yet Osler and McCrae estimated the frequency of painless cases at 14 per cent, and Lebert at as high a

figure as 25 per cent. In my own practice I have had such a painless case referred to me by Drs. Jayne and Bonney, in which the autopsy performed by Dr. Wilder confirmed the diagnosis of cancer. Vomiting is one of the most constant symptoms and is present only in 50 per cent of all cases. Hematemesis was absent in 76 per cent of the Osler and McCrae series and in 88 per cent of Lebert's.

As to tumor, Osler and McCrae were unable to detect the tumor in 24 per cent, and the Fenwicks in 31 per cent of their respective series. Since the above enumerated symptoms manifest themselves, when present, as a rule in the later stages of the disease, it becomes evident how difficult, and at times, how utterly impossible it is to make an early diagnosis. Yet, how important it is to make an early diagnosis. In the days gone by, when it was considered that the only hope for a patient suspected of suffering from carcinoma lay in the physician making a mistaken diagnosis, an early recognition availed nothing. But the recent advances in gastric surgery give ground for hope that a malignant growth, if early and thoroughly removed before the other organs became infected, may reduce the mortality to as low a figure as those of cancer of the uterus and of the mammae. Thus the question of early diagnosis becomes one of paramount importance. Of all the symptoms and physical signs I know of there are none that are so conspicuous and so constant as the secondary or constitutional phenomena, namely, loss of flesh, diminution of energy and strength, and progressive anemia. Unlike any other disease of the digestive tract, in cancer these constitutional phenomena are out of all proportion to the disease of the stomach. Another fact which stands out boldly is the pessimistic view which the patients take of their own disease from the very outset, in contrast with the optimism exhibited by phthisics. They insist that they

grow worse from day to day. There is not alone an absence of appetite, but a positive dislike to certain kinds of food, especially to meat. Regulation of diet has no influence for the better and the administration of drugs does not relieve the local symptoms. Until we find a means of detecting the product of the morbid growth in the urine, in the blood, in the stomach contents or in the saliva, these constitutional and psychic symptoms should receive the careful attention of all practitioners. They are the earliest to appear upon the scene which eventually is to close the career of a human life.

After the disease has progressed for some time, there is no better or more constant diagnostic feature than the examination of the stomach contents. In 95 per cent of all cases hydrochloric acid is found absent, and in 80 per cent lactic acid is found instead. The absence of digestion leucocytosis may help to confirm the diagnosis, as also the absence of sulphocyanide of potassium in the saliva. A microscopical examination of the stomach contents should never be omitted. In 90 per cent of all cases the Oppler-Boas bacilli, are found, and in some few cases fragments of the tumor and cancer cells may be detected.

DIFFERENTIAL DIAGNOSIS.

Cancer of the cardiac end of the stomach must be differentiated from cicatricial stricture and cardiac spasm. The history of corrosive poisoning or of symptoms of an ulcer will distinguish cicatricial stenosis. Hemorrhage is absent. In cordio spasm the onset is sudden, there is no regurgitation, no loss of flesh, the tube may pass into the stomach and the complaint may last for years. Cancer at the pyloric end must be differentiated from ulcer and pyloric adhesion. In ulcer there is no cachexia, the loss of flesh is but moderate, there is an excess of hydrochloric acid in the stomach, there is as a rule no tumor and no lymphatic involvement.

The pain follows the ingestion of food and is localized; emesis relieves local symptoms; hematemesis is profuse, the tongue is clear, the appetite is good, digestion leucocytosis is always present. Treatment has a good effect. Chronic gastritis is to be distinguished by the absence of severe pain and hematemesis, by the slight loss of flesh, presence or diminution in quantity of H.Cl. no tumor and the abatement of the symptoms under treatment.

Nervous dyspepsia sometimes offers great difficulties for diagnosis. The age of the patient, the paroxysmal attacks of pain, the variable appetite, the moderate anemia and the presence or excess of H.Cl. will help to clear up the diagnosis. A few words about the liability of confusion with pernicious anemia. In anemia the patient grows fat, there is dyspnoea and palpitation and periodic attacks of fever. There is no hemorrhage; H.Cl. may be absent, but no lactic acid is found. The number of the red blood corpuscles may fall below one million to the cubic millimeter, whereas in cancer of the stomach, according to Henry, the number never falls below one million and a half. Poikilocytosis and megaloblasts are always present.

It would be out of place in a five-minute paper to discuss the differential diagnosis of various tumors and cysts that may be found in proximity to the stomach. In conclusion let me make the following bold statement:

All cases presenting gastric symptoms of obscure origin with a lowered percentage of hydrochloric acid in a man or woman over 40 years of age in whom loss of flesh, failing of strength and profound anemia are predominating features, and that does not yield to dietetic and medicinal treatment, should be subjected to an exploratory laparotomy.

CARCINOMA OF THE STOMACH, PALLIATIVE MEDICAL TREATMENT.

BY W. A. CAMPBELL, M. D., COLORADO
SPRINGS.

Mr. President and Members of the Society: Five minutes' time to tell what we know about the palliative treatment of carcinoma of the stomach! This is rather an extravagant allotment of time in which to present this subject to a body of scientific men. Text book writers will devote one hundred or more pages to the consideration of the history, etiology, pathology, symptomatology and diagnosis of this disease, and complete their article with one-half page on the medical treatment. The deadly nature of the disease and our inability to aid by medicinal remedies in curing it are so well known that the time might be abbreviated to one minute, and then we would have more time than we actually needed to indicate to this body of medical men the treatment to be carried out.

The diagnosis having been made, the treatment, briefly expressed, is to alleviate pain, check emesis, allay the existing catarrhal conditions, empty and disinfect the dilated stomach and control hematemesis. Had we the means of absolute diagnosis and did the profession at large possess this knowledge and could we see the patients in the incipient stage, immediate surgical interference would be the proper measure. This rule is followed in other regions of the body affected with cancer, and would be justifiable in carcinoma of the stomach. When exploratory incisions are indicated will be considered in the surgical treatment. We will merely state that the early operation offers the only hope of cure.

We do not know of a specific remedy. Several have been heralded in the past, as conium, belladonna, condurango, methyl blue and others, but all have proved of no

avail in the *cure* of the disease. We have to be content in the treatment of conditions; hence the medical treatment can only be palliative, although it is humiliating to admit it. The vast majority of cases do not come under the observation of the profession until far advanced; or if they do, are not recognized. Having diagnosed the disease, it is our duty to do all we can to make life tolerable to our patients, and see that their sufferings are mitigated—euthanasia, if you please.

Pain is the most harassing symptom. We should commence with the mildest analgesics that will afford relief. Codeia may be sufficient in the earliest stages. Chloral can be tried. The time will soon come when morphine alone will relieve the suffering. It is best given hypodermatically. Opium should be avoided, owing to its constipating tendency.

The catarrhal symptoms may be the first to engage our attention. We find the judicious use of stomachic tonics a great advantage. Condurango is of this class and gained its reputation through its tonic action. Hydrochloric acid may be indicated. Lavage fulfills a very important place in this connection in cleansing the stomach of fermenting food products, checking vomiting, producing sleep, overcoming constipation and aiding very materially in digestion. The diet should be directed by the physician. Owing to the wasting character of the disease, the diet should be a nutritious one and easily digested. By careful treatment of the catarrhal conditions we often see our patients do better for a time and help them to endure their fatal malady.

Constipation should be overcome by flushing the lower bowel and by the milder cathartics. The salines are usually found too exhausting.

Vomiting is often one of the most distressing complications. It should be met as in other gastric disturbances. No remedy is a specific for the vomiting. The

vomiting is a means of relief in those cases of dilatation due to pyloric stenosis. Hematemesis may endanger the patient's life. It is best controlled by the hypodermic use of ergot.

Other complications as pyrosis, gaseous distention, etc., may demand our attention and will have to be treated to satisfy our patient both in body and mind. The physician's resources will be severely tested to meet all the complications that may arise.

The time will come when stenosis of the pylorus or cardia, with dilatation, obstruction or starvation, will compel us to inform our patient that we have done all we can to relieve him of his sufferings, and it will be necessary to call on the surgeon if he would have his life prolonged.

CARCINOMA OF THE STOMACH— SURGICAL TREATMENT.

BY C. A. POWERS, M. D., DENVER.

I agree most heartily with Dr. Spivak when he says that a patient at or beyond mid-life presenting progressive loss of flesh and strength, with anemia and increasing dyspepsia not yielding to ordinary medical management, should be submitted to an early exploratory stomach operation.

Improvement in the surgical management of cancer must lie in three directions:

First. Early diagnosis.

Second. Wide and thorough excision.

Third. Constant watching of the patient for many years afterward or until his death.

To this the stomach is no exception, and all progress which has been made in the management of cancer of the stomach has been in this line. The surgical management proper may be divided into two classes. First, palliative—the relief of pyloric or cardiac obstruction; second, the removal or attempted removal

of the disease itself. In the majority of cases which reach the surgeon, unfortunately the palliative management only is possible. The great majority of all of these cases which we see on the operating table are too far advanced to warrant an attempt at radical cure.

Where the cardia is obstructed gastrostomy should be done. This gastrostomy may be of the type with which the surgeon is most familiar. One of the best is the Ssabanajew-Frank method, the bringing of the stomach to a point a little above the ninth cartilage. In cancer of the cardia this is in many instances not possible, for the stomach is small and contracted, its wall is thickened, and it does not readily come up into the abdominal wound. So one may be forced to content himself with a simple gastrostomy of the Fenger type, as possibly he may apply the fistula of Witzel.

For cancer of the pylorus, too far advanced to warrant thought of excision, a simple gastro-enterostomy may be done. Kroenlein in a recent review of 264 cases of gastric carcinoma concludes that unoperated cases will live on an average one year; gastro-enterostomy will on an average prolong life three and a half months; extirpation of the growth adds to this 14 months, or prolongs life $17\frac{1}{2}$ months.

Gastro-enterostomy is the most frequent stomach operation which we do today, but we hope that the frequent operation of the future will be gastrectomy. The type of gastro-enterostomy can be selected by the surgeon according to his experience and his preference. If one makes the anastomosis with simple suture, the suture of Connell (Connell of Leadville) is perhaps the best which we have. Mechanically, nothing can or does equal that marvelous device, the Murphy button. In the majority of instances it will be safer to add at the time an entero-enterostomy to relieve the column of fluid which col-

lects between the orifice of the biliary-pancreatic duct and the stomach anastomotic site; the secondary entero-anastomosis will relieve the stagnation of that column of fluid. Mayo of Rochester, whose experience in stomach surgery is probably greater than that of any other man in the world, says it makes no difference whether the gastro-enterostomy be done in front or behind. The anterior operation is perhaps more easily and more quickly done.

The mortality of gastro-enterostomy will be in direct ratio to the stage at which the patient is seen. The advanced cases are very apt to die. The early cases are very apt to get well. On the average the mortality is probably not less than 15 or 20 per cent.

The other surgical procedure, gastrectomy, is to be done whenever the surgeon's judgment tells him that it will give the patient a fair chance of relief. There should be no palpable glands, the involved stomach mass should be free and movable, and the surgeon should have a fair assurance that he can get beyond the limit of the disease. Complete removal of the stomach is almost in the nature of a surgical curiosity. The original case of Schlatter incited a few other surgeons to try it, but I know of no case that has lived beyond one or two years. Partial gastrectomy is the operation of choice. Mayo has called attention to the work of Hartman and Cuneo who found the lymphatics most apt to be involved to lie in three places; in the gastro-hepatic omentum, in the gastro-colic omentum and in the gastro-splenic omentum. The operation which Mayo, Hartman, Moynihan and others advise is somewhat as follows: First, division of the duodenum well without the pylorus; then an oblique incision of the stomach from above, just taking in the gastric artery, down and out to the left, leaving a fair sized stomach pouch to which the small intestine can be fixed;

and adding to this a secondary entero-anastomosis.

Discussion.

Dr. Sheldon: We have been told by Dr. Powers that gastro-enterostomy is the most frequent operation on the stomach, and I think no one will dispute his statement. Now, what we want to know is how shall we do this operation. There is nothing but diversity of opinion on this point. No two surgeons seem to agree on the various points of technique. I believe there are three important points to be considered in doing a gastro-enterostomy.

First, where shall we make the anastomosis; second, how shall we make it; third, what shall we do with the portion of intestine between the site of anastomosis and the pylorus? Now, as to the point at which we shall make the openings: I consider this the all-important thing in gastro-enterostomy. The opening in the intestine should be situated perhaps seventeen inches from the point where the small intestine passes under the superior mesenteric artery. Dr. Grant has told us that the opening should be made at a distance of two feet from this point. I can see no advantage in leaving more than 14 to 17 inches of gut proximal to the opening. I usually make a transverse incision in the intestine in using the button, but a longitudinal incision will give good results. The opening in the stomach should be made in the most dependent portion of the organ. This is very important. It believe that it makes no difference whether the opening is anterior or posterior; but it must be made in the lowest point of the stomach to secure the best results.

The second point is: How shall we make the anastomosis? Personally, I favor the button, but believe that equally good results can be obtained by suturing or by McGraw's elastic ligature. Placing the omentum over the anastomosis is a precaution that does not harm and may do good in some cases.

I believe that the method of disposal of the intestine proximal to the site of anastomosis depends entirely on the condition of the pylorus. If the pylorus is occluded, nothing need be done with this portion of the gut; if the pylorus is large, it should be closed or an entero-enterostomy should be done. I am of the opinion that the vicious circle will almost never occur if the opening is made in the most dependent portion of the stomach.

It is my custom to insist on gastro-enteros-

tomy patients sitting up as soon as they recover from the anaesthetic. This assists in preventing the new opening from being occluded by mucus from the stomach.

Dr. Spivak: Just one word in regard to the treatment of gastropotosis. Dr. Little has omitted one of the most recent treatments of gastropotosis; and it is a treatment that is applicable only to women before the age of 45, and it takes for its accomplishment nine months.

Dr. Aaron, of Detroit, reported a case of gastropotosis that he treated for several years with no effect, when the woman fortunately got pregnant. The pregnant uterus raised the stomach to its normal level, the gastropotosis came to an end, and the case remained well ever after.

Dr. Leonard Freeman: There is one subject I wish merely to mention that has not been considered in this symposium. It is a somewhat delicate question to handle because it is still under discussion. It is the advisability of performing that one operation which answers for nearly all affections of the stomach, the operation of gastro-enterostomy, for chronic dyspepsia. There are many people who go through life suffering from chronic dyspepsia, enjoying nothing, being able to do next to nothing. An operation of gastro-enterostomy will often cure such cases when they cannot be cured by any other means. It becomes quite an important question whether gastro-enterostomy should be employed. It is not dangerous when done upon proper cases. It requires that the diagnostician be extremely careful in his diagnosis, it requires the trial of many remedies before operative measures are resorted to; and yet the time seems to be coming when people will no longer be required to pass lives of misery from this source.

Dr. McHugh: Since Dr. Corwin, of Pueblo, did not read his paper upon the surgical treatment of gastropotosis and dilated stomach, I would like to suggest that some one who has had experience with some of the new operations for gastropotosis give us the benefit of his experience.

COUNTY MEDICAL SOCIETIES.

Boulder County Medical Society met in regular session in the Boulder County Court room, Thursday, February 4, at 7:30 p. m., President Dr. W. W. Reed in the chair. There was a good attendance. The Treasurer's report was read, showing receipts from all

sources for the year, \$129.05; disbursements, \$115.75; leaving balance on hand of \$13.30.

The program for the evening was a symposium on **Pneumonia**; the subject was divided into three topics, Lobar, Broncho- and Tuberculosis Pneumonias. Drs. Queal, Trovillion and Barbour were to open the discussion on the different topics, respectively. Drs. Trovillion and Barbour being absent, the evening was devoted to Dr. Queal's paper and a discussion thereof. The doctor mentioned the fact that statistics show that both the morbidity and mortality of pneumonia were on the increase. But he questioned if this was generally true, as the greater accuracy of statistics of late would probably help account for the apparent increase; and the largest number of reports coming from large hospitals where the most unfavorable cases were received, help to increase it. He called attention to the pulse rate tending to show a direct ratio to the fatality of a case, temperature not necessarily so.

He emphasized the fact that there are no specific treatments; but that a great deal can be done by judicious medication. The treatment in general being that of sustaining the patient and favoring elimination. He advised watching for vasomotor failure as indicated by the sphygmographic tracing, as well as for heart failure. The coal tar products are generally harmful, as they tend to weaken the heart muscle, and unfavorably effect the vasomotor centers, cold being the best antipyretic. He condemned nitro-glycerine as being a vasomotor dilator, also veratrum-viride. Strychnine, judiciously used, as well as adrenalin and whisky, when indicated, were approved. He was rather favorable to small doses of diffusible stimulants often repeated, and also approved saline infusions.

The paper was freely discussed. Dr. Lindsey said that the disease being primarily an intoxication, we must be on the lookout for other sources of intoxication, such as constipation. He thought heavy and cumbersome poultices often interfered with elimination, and that the application of heat and cold not only favored elimination but improved the circulation. Stimulating the skin by friction and other means were often helpful. Dr. Harlow called attention to the value of examination of the blood, especially as to the granular elements. The general leucocytosis, particularly a high percentage of polymorphonuclears being essential to a good prognosis, providing the infection was a severe one, is

often the first indication to be found of improvement. The contrary indicated that the blood making centers were over-powered by the toxins. Coal tar antipyretics tend to destroy these elements and therefore affect the case unfavorably.

Dr. Cattermole had used anti-streptococcic serum without success, and does not believe that it is helpful. He depends on stimulation and elimination.

Dr. Lindsey thought that over-crowding of the cities and the devitalizing effect of la grippe were tending to increase the mortality as well as morbidity of the disease.

Dr. Rodes thought that he had seen a desperate case recover through the instrumentality of heroic doses of digitalis. He thought very favorably of saline solutions.

Dr. Gilbert has used carbonate of creosote in ten or twelve cases, and thought that it was helpful. He did not favor too heroic stimulations except to tide over the crisis. He also thought the saline solution very valuable. He uses it by enema except where there is urgent need, then by hypodermoclysis.

Dr. L. O. Rodes' application for membership was received and referred to the Board of Censors. Dr. Russell reported that the city council were considering the idea of employing Dr. E. H. Robertson to make monthly analyses of the city water supply; and that they had referred the matter to him, therefore he requested the opinion of the society. The Society recommended that he be employed.

The program for the next meeting is to be devoted to a symposium on rheumatism.

O. W. GILBERT, Secretary.

Denver.—At the stated meeting of February 2, H. G. Wetherill read a paper upon **The Formation and Resolution of Peritoneal Exudates and Adhesions**. In a case of ectopic gestation upon which he had operated, after the death of the foetus at term, the exudates and adhesions which constituted the wall of the sac were so firm and extensive, including so many of the important viscera, that it was not considered justifiable to disturb them. Two years later it was necessary to reopen the abdomen on account of ventral hernia; and no traces of these great masses of peritoneal exudate remained. In a case of salpingitis, with very extensive exudates rendering the uterus absolutely immovable, a few months of rest and appropriate medical treatment restored the mobility of the uterus, and removed nearly

all evidence of exudates. The trouble recurred later, because the patient did not avail herself of an interval operation for removal of the tubes.

These cases illustrated the ability of nature to wall off infection, and afterwards to remove the exudate when it was no longer useful. He urged the importance of allowing the infection to be thus limited, put in quarantine and rendered less virulent, before proceeding to such operation as might be necessary to remove the source of infection, and prevent repetitions of the attack. In this connection the efforts of nature to localize infection by suspension of all peristaltic movement, and even by tympanitic distension of the intestines, should not be recklessly interfered with. Tympanitis could generally be relieved by use of the rectal or stomach tube. If care were taken to have the alimentary canal clean before doing an abdominal operation, there would be no need of purging afterward.

In discussing the above paper, Dr. Rogers pointed out how the crest of the wave of operative interference in appendicitis and other diseases, had been reached some years ago; and we were now rapidly approaching the bottom of the trough.

Dr. Freeman thought that in many respects the views expressed were excellent. But he doubted if tympanitis should be regarded as favorable symptom, and no attempt made to prevent or reduce it.

Dr. Perkins noticed the adhesions left by abdominal operations were most likely to cause trouble within a few months after the operation. He frequently gave a cathartic about one and one-half hours before the time for an abdominal operation, expecting it to act soon after the operation was completed. Dr. Burns believed that puerperal infections should rarely, if ever, be fatal, if properly treated.

A case of **Traumatic Dislocation of the Lacrimal Gland, and Foreign Body in the Orbit** were reported by Edward Jackson. A man had been thrown upon a piece of sage brush, which breaking off left several pieces of splintered wood imbedded about an inch beneath the surface, in the upper part of the orbit. The part of the stick which did not remain in the wound, having passed through the lacrimal gland, dragged it out of its normal position into the lid. Later it suppurated and was removed. The symptoms were: displacement of the eye-ball forward, downward and inward, great swelling of the lids and

conjunctiva and immobility of the globe. After removal of the pieces of wood the movements of the eye were fully restored, except a slight limitation upward. It was pointed out that in such an injury the presence of a foreign body in the wound should always be suspected. But in the absence of definite evidence of its presence and position; the important structures of the orbit should not be endangered in a search for it.

Dr. J. A. Wilder exhibited a specimen showing complete destruction of one lung and impairment of the other. He, also, reported a case of **pulmonary tuberculosis, at the age of 74 years**. The patient was a woman who had lived for years in Colorado, in good health. She then began to cough, with expectoration and loss of weight, and her sputum showed tubercle bacilli in moderate numbers. She was placed on an ordinary tonic treatment for the disease; and at the end of six months had gained twelve pounds, was in excellent health, and had been free from cough or expectoration for six weeks.

February 16.

H. T. Pershing discussed the symptoms, diagnosis and treatment of **apoplectiform attacks**. These embrace loss of consciousness, loss of speech and hemiplegia, developing suddenly, or at most within a very few hours. Complete hemiplegia was always organic, but if partial, it might be functional. Permanent loss of speech was organic. Transient aphasia might not be organic. But only time could determine whether aphasia would be permanent or transient. The onset of cerebral inflammation might be rapid, and that of uraemia might be very rapid or even sudden. The "apoplexy without lesions," of the older writers, was probably uremic.

In making the diagnosis of the form of vascular lesion present, it should be remembered that embolism was absolutely sudden and generally the source of the embolus, as an endocarditis, could be discovered. In connection with hemorrhage, age, habit and previous disease must be considered; also, whether there was any cause for heightened blood pressure immediately before the attack. An immediate fall of temperature of one degree would point to hemorrhage. Hemorrhage increased in frequency with age. But among the very old thrombosis became more common. Thrombosis occurred in the very old from arterial degeneration, and enfeebled circulation. It also occurred in the comparatively young from syphilitic endarteritis.

In the matter of treatment, rest in bed was most important. It must be borne in mind that in the comparatively slight attacks of apoplexy, the lesions are the same in character; and they require just as long for their repair, as do the more extensive lesions of the severe forms. Treatment to influence the blood pressure should not be undertaken without a diagnosis of the character of the lesion. After hemorrhage increase of blood pressure might be disastrous. But after thrombosis decrease of blood pressure would be equally dangerous. The nitrites, however, tending to lower the blood pressure, but to promote the peripheral circulation, might be given in either case.

Dr. Hall briefly reported some cases of embolism in which it was very difficult to discover the source of the embolus.

Dr. Sewall had been particularly interested in cases which started with the symptoms of an apoplectic attack, but which did not go on to hemiplegia, or other evidence of an organic vascular lesion.

Dr. Leonard Freeman read a paper entitled **Some Observations on Chronic Seminal Vesiculitis**. Cases of this disorder he found were comparatively common, but the majority of them had been unrecognized because of the insufficient account of this condition given in most text-books, and by teachers of surgery. His paper was based upon some sixty cases. The common causes were gonorrhea, tuberculosis, typhoid fever, cystitis and enlarged prostate.

The usual direct symptoms were: (1) Sensations of fullness, aching and itching in the region of the prostate and rectum. (2) Irritation at the neck of the bladder. (3) Recurrent attacks of gonorrhea without renewed infection—a kind of auto-infection of the urethra from the vesicles. He had seen one case in which the gonococci were abundant sixteen years after the infection had occurred. (4) Gleet. (5) Bacteria in the urine. (6) Pus in the urine, either continuously or intermittently. (7) Pus casts of the seminal ducts. (8) Repeated attacks of epidymitis.

The remote symptoms included obscure reflex pains, which he had known to closely simulate appendicitis, disease of the kidney, and malignant disease of the colon. There was also apt to be a good deal of mental disturbance and depression, or distinct hysteria. The diagnosis depended on the symptoms enumerated, upon the feel of the vesicles through

the rectum, and upon microscopic examination of the contents of the vesicles.

The treatment was either massage of the vesicles or extripation. Medication was useless. Massage should be repeated once in four days, or at longer intervals. At first there was apt to be a good deal of soreness, but this generally soon passed away. It could be better done with the finger than with any special instrument. In some cases a complete cure could not be effected. But generally there was great improvement in the patient's condition, often from the first emptying of the vesicles. After the failure of a massage to give relief, or in tubercular cases, the operation of extripation of the vesicles was justifiable.

Dr. Freeman exhibited an instrument which he had devised to help in drawing down the bladder for operation upon the vesicles, or prostate or neck of the bladder.

Dr. Kennedy pointed out that many of these cases were regarded as cases of sexual neurasthenia. Disease of the vesicles was reported to occur in ten per cent of all cases of acute urethritis. In practicing massage of the vesicles, he found the extreme lithotomy position most favorable.

Dr. Arneill reported a case of **pulmonary and hepatic disease** of obscure origin. A man who had syphilis 30 years ago, began two years ago to have daily chills, with high afternoon temperature. Living in New Orleans, he was treated for malaria, without any blood examination. Then he was treated for several months in New York with tuberculin injections, without examination of the sputum. Later he had gone to Arizona, where many examinations of the sputa had revealed no tubercle bacilli; but he had several pulmonary hemorrhages and a continuous cough, although the daily fever had disappeared. Anti-syphilitic treatment had produced no improvement. There was enormous enlargement of the liver; and the physical signs of tuberculosis. The blood examination was negative. No tubercle bacilli could be found in the sputa, and no amoebae of dysentery, although the appearance of the sputa had suggested liver abscess, opening through the lung.

Las Animas.—The Las Animas County Medical Society met in regular session Friday evening, February 5, with a good attendance.

The paper of the evening was read by Dr. R. G. Davenport on **Discharge from the Middle Ear**. In it the doctor showed how import-

ant it was that these cases should be sent to the specialist as soon as possible, so that the patient would run no risk of disastrous results. The paper was fully discussed by the members present.

The Society is steadily growing, three new members being admitted.

PERRY JAFFA, Secretary.

San Luis Valley.—On the evening of the 8th of February a special meeting of the San Luis Valley Medical Society was held in Alamosa.

Dr. J. N. Hall, of Denver, was the guest of the evening, and reported several very interesting cases of **vascular lesions**. This paper was discussed by Drs. Melvin, McFadzean, Rosebrough, Whedon, Orr and Pollock.

Peri-typhoid fever was the subject of a paper by Dr. J. Tracy Melvin, which was also generally discussed.

The question of **state examination for typhoid reaction** was taken up, and the Society decided to do all in its power to secure the free examination of suspected cases by the state bacteriologist. There certainly seems only one reason why the state should not do this, just the same as for diphtheria, and that is the small appropriation. Surely it is just as important as the examination for diphtheria. How simple it is if you only have a fresh culture to make the test; but how few are the doctors who have the incubator and the culture. We believe that these ends may be reached by each member doing what he can with the individual members of the legislature to increase the amount allowed the State Board of Health.

The next meeting of the Society will be held in Creede in May.

A banquet, in the disguise of a "small lunch," closed the meeting. But some of the members have not yet got over the effects of that "small lunch," and Dr. Hall's rabbit stories.

E. E. WHEDON, Secretary.

Otero County.—The Otero County Medical Society met at La Junta, on February 9. Dr. Moody, of Fowler, read a paper on **Abortion** and its management, which will appear in full in an early number of **Colorado Medicine**. The paper was discussed by Drs. Donlon, Stubbs, Timmerman, Moore and Kearns.

E. GARD EDWARDS, Secretary.

OTHER MEDICAL SOCIETIES.

Denver Clinical and Pathological Society.—At the meeting of February 12, Dr. Fleming

exhibited a specimen of **ectopic gestation**, extra-peritoneal rupture having occurred in the folds of the broad ligament.

Dr. Perkins reported a case of well developed woman, no vicarious menstruation, or menstrual symptoms, in whom there was entire **absence of uterus, ovaries or vagina**. Discussed by Dr. Fleming.

Dr. Grant discussed the post operative **condition after hysterectomy**, of a case two years subsequent to the removal of a fibroma, in which though menstruating regularly, the ovaries were found cystic, of the size of an orange, the appendix diseased and perforated, and the other tube also diseased.

Dr. Hall reported the case of a miner who for fifteen years had marked dyspnea, supposed to be due to involvement and **swelling of the bronchial glands** and pressure on the trachea. He discussed the operation done in Germany for this condition by the removal of the manubrium to relieve the pressure on the trachea. Discussed by Drs. Grant, Beggs and Edson.

Dr. Edson reported the case of a woman, aged 30, having goitre, general **purpura haemorrhagica**, faintness, etc. Failure followed treatment for the purpura. Later there was profuse menorrhagia. A pessary was introduced and recovery followed.

Dr. Moleen reported a case of **streptococcus infection** in a soldier in the Philippine Islands, who had pneumonia eighteen months previously. Later he became emaciated, anemic; had chills, high temperature, dullness at the right apex, and slight expectoration. The blood examination was negative. Diagnosis, streptococcus pneumonia. Discussed by Drs. Perley, Hall and Wetherill.

Dr. Wetherill reported a case of a child three and one-half years old with blood and pus in the urine, and a mass in the right side. Operation and autopsy disclosed a **sarcoma of kidney**. The urine was clouded by heat or nitric acid, but contained no albumin or albumose. Discussed by Drs. Hill, Bergtold, Hilkowitz and Wetherill.

Dr. Jackson reported a case of migraine with attacks of transient hemianopsia, accompanied by aphasia. Discussed by Dr. Bergtold.

Dr. Stover discussed the effect of radium rays which produce a fluorescence on quinine. The X-ray used on quinine was found to be 100 times stronger than the radium rays, for the purpose of causing fluorescence.

Dr. Rogers reported (1) the case of a man with intense pain and abdominal rigidity, dullness over the liver, and no history of pleurisy. Aspiration was done and a pint of serum withdrawn. Diagnosis, pleurisy with effusion. (2) Case of gunshot wound of shoulder, the ball passing directly through the axilla without injury to the axillary vessels or the brachial plexus. Discussed by Drs. Hershey and Beggs.

F. W. KENNEY, Secretary.

The Colorado Ophthalmological Society met February 20, at Denver, in the office of Dr. Black. Nine members and two guests were in attendance; and the three hours' meeting was fully occupied in the presentation and discussion of cases.

NEWS ITEMS.

At the meeting of the National Legislative Conference, in Washington, February 11 and 12, the plan of the Colorado Medical Legislative League was endorsed, as the best and most effective method yet proposed for securing sound medical legislation. Dr. J. B. Sanford, of Denver, was chosen Secretary of the National Organization.

The annual meeting of the staff of the Mercy Hospital, Denver, was held at the hospital, Tuesday, February 23. It was followed by a banquet given to the staff by the sisters in charge of the hospital. Plans have been completed and money secured for the building of a new wing, which will increase the capacity of the hospital to 120 beds.

Six cases of small-pox developed inside of two days, during the early part of February, in La Junta. Two of these cases were county officials, who were infected by a juror from Manzanola. The other cases were all traced to infection at a Mexican dance. Subsequently investigation by the county health officer brought out the existence of twenty-six cases at The Plaza, a Mexican settlement at Higbee, twenty miles from La Junta; from which place many of the inhabitants had attended the dance.

The sixteenth annual commencement of the Colorado Training School for Nurses was held at the Denver County Hospital, February 25. Seventeen graduate nurses received their diplomas. The course of instruction in this training school now extends over three years.

The Visiting Nurse Association, of Denver, held an open-meeting on the evening of February 18, at the residence of Mrs. W. G. Fisher. About 250 persons were present. Miss Harriet Fulmer, Superintendent of the Visiting Nurse

Association, of Chicago, made an interesting address. Dr. Eleanor Lawney reported the work done in Denver in 1903.

The entire expense of the Association during the year was within \$2,000. Two nurses are regularly employed, and sometimes a third. Ninety cases of child-birth were attended during the year.

Patients who are able to pay a small fee to the nurse are asked to do so. Money so collected is turned into the treasury.

The Association is supported by the Charity Organization Society, by contributions and by the annual dues of \$2.00 each from the 250 associate members.

The nurse spends about forty minutes upon each visit. She may make several visits to one patient in the day. Any doctor may get the services of a visiting nurse by telephoning to the Charity Organization Society.

The Colorado Medical Journal announces that its March issue will be a special tuberculosis number, containing papers by some 30 contributors, the majority of whom are residents of other states. In the list are such well-known names as Stengel of Philadelphia, Shurly of Detroit, Herrick of Chicago, Eichberg of Cincinnati, Taylor of Philadelphia and Abrams of San Francisco. Half-tone portraits of the authors will accompany the articles.

BOOKS.

Social Diseases and Marriage.—By Prince A. Morrow, A. M., M. D., Emeritus Professor of Genito-Urinary Diseases in the University and Bellevue Hospital Medical College, New York; octavo; 390 pages; cloth, \$3.00 net. Lea Brothers & Co.; New York & Philadelphia. 1904.

The twenty-four years that have elapsed since the appearance in English of Fournier's great book, "Syphilis and Marriage," have been marked by great changes in the knowledge of venereal disease. A great many morbid conditions, particularly of the nervous system, although still classed as para-syphilitic, have been closely connected with syphilis. The period assigned for the probable cure of syphilis has, also, been greatly lengthened. Then it was 6 months; later 2 years; now 4 years, with recognition of the fact that the period of possible contagion may last even much longer. Within this same time it has become recognized that gonorrhea was equally malignant, in some respects more dangerous; and in a

latent form might continue indefinitely without giving any evidence of its presence.

All these things add infinitely to the social importance of these diseases; and entitle them, above all other forms of contagious disease, to the name which Morrow has given them of "social diseases." Their relation to marriage and the transmission of life is of enormous importance. It involves questions of ethics and sociology that lie outside of the usual domain of medicine. Yet there is no one else in the community so well fitted to deal with them as the physician. There arise many situations in which he knows that something must be done, and yet there is no one to do it. However difficult, it is a case that the family physician could not refer to a specialist, even though he had the expert to call upon. The personal factor is so large that the responsibility cannot be transferred. The best help in meeting such an emergency is to be obtained from such a thorough, serious discussion of the questions involved, as this book furnishes. True it does not always offer a satisfactory solution for the difficulties that it raises. Often such a solution would be impossible. But to have the difficulties well stated and analyzed, will be the greatest help in avoiding mistakes.

The work is divided into three parts. (1) Preliminary considerations, Gonorrhea and Marriage; (2) Syphilis and Marriage; (3) Social Prophylaxis. Under this latter head legislative enactments, state supervision, and moral crusades are carefully considered. But the remedy which is most directly at hand, which can be relied upon to help those best worth helping, and which alone will render other measures practicable, is education; both hygienic and moral.

The book is one which may properly claim the attention of every practitioner of medicine; and while some of its chapters are too technical to be of much use to those outside of the profession, others might do the most good, if read by jurists, ministers of religion, educators, and even thoughtful parents. Certainly the physician can find within its pages the material of greatest value in the presentation of the subject to laymen.

Biographic Clinics. Vol. II. By George M. Gould, M. D., Editor of *American Medicine*; 400 pages. Philadelphia; P. Blakiston's Son & Co. 1904.

In this work Dr. Gould traces to eye strain

the origin of the ill health that afflicted George Eliot, George Henry Lewes, Wagner, Parkman, Jane Welch Carlyle, Spencer, Whittier, Margaret Fuller Ossoli and Nietzsche. It is constructed upon the same lines as his first volume of *Biographic Clinics*, which contained studies of the ill health of De Quincy, Carlyle, Darwin, Huxley and Browning. It is of even greater interest than the first volume, because it contains some reply to Dr. Gould's critics, an introductory chapter on Eye Strain and the Literary Life, one on Eye Strain and Civilization, and a reprint of his paper on "Why Glasses do Not Give Relief."

Gould complains, with reason, that the preceding volume received scant justice from its critics. But it can be safely predicted that this one will fare but little better. There is an air of special pleading, distortion of facts, and an over-statement about it, that is more likely to produce opposition than conviction. But we can fairly ask the reader who feels his antagonism being aroused, to turn aside from Dr. Gould's comments and interpretations; and consider only the citations from the letters, books and biographies of these people. Then, if he is familiar with what eye-strain can do, and does do, in the way of curtailing usefulness and destroying the pleasure of living; let him fairly ask whether many of these symptoms **may not have been due** to eye-strain? Whether it is not probable that they **were due** to eye-strain? Whether, although the eye-strain explanation has been offered by Dr. Gould, we are not forced to admit that the only alternative to its acceptance is to relegate these cases to the mysteries of Providence, or the unknown regions of neurology, and attempt no explanation of them whatever?

If we understand Dr. Gould's proposition to be, that eminent persons suffer in this world from nothing but eye-strain, and its more or less remote effects, we may feel strongly inclined to reject it. But it is not at all unreasonable to suppose that some eminent persons may suffer, along with other things, from eye-strain; and with a severity that is measured by their power of intense application, and a heightened capacity for suffering. If, as appears to be the case, this fact has not been sufficiently appreciated in the past, Dr. Gould should be thanked for forcing it upon our attention; even though we think he has done so with a manifest lack of poise and proportion.

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MEDICAL MEETINGS FOR 1904.

SOCIETY.	PLACE.	TIME.
American Medical Association..... Secretary, Geo. H. Simmons, 103 Dearborn Ave., Chicago.	Atlantic City	June 7-10, 1904.
Arizona Medical Association..... Secretary, John W. Foss, Phoenix.	Tucson	April 27-28, 1904.
Colorado State Medical Society..... Secretary, J. M. Blaine, Steele Block, Denver.	Denver	October 4-6, 1904.
Idaho State Medical Society..... Secretary, Ed. E. Maxey, Boise, Idaho.	Lewiston	October 6-7, 1904.
Kansas Medical Society..... Secretary, C. S. Huffman, Columbus, Kansas.	Topeka	May 5-7, 1904.
Montana State Medical Association..... Secretary, B. C. Brooke, Sixth and Main Sts., Helena, Montana.	Butte	May 18, 1904.
Nebraska State Medical Society..... Secretary, A. D. Wilkinson, Lincoln.	Omaha	May 3-5, 1904.
New Mexico Medical Society..... Secretary, J. F. McConnell, Las Cruces.	Albuquerque	May, 1904.
Oklahoma Territory Medical Society..... Secretary, E. O. Barker, Guthrie.	Oklahoma City.. ..	May 11, 1904.
Utah State Medical Society..... Secretary, W. S. Ellerbeck, Salt Lake City.	Ogden	May 10-11, 1904.
Wyoming State Medical Society..... Secretary, H. S. Finney, Rawlins.	Rawlins	September 13, 1904.
American Academy of Ophthalmology and Oto-Laryngology..... Secretary, D. T. Vail, 4 W. Seventh St., Cincinnati, Ohio.	Denver	August 4-6, 1904.
Rocky Mountain Interstate Medical Society..... Secretary, Geo. A. Moleen, 316 Mack Block, Denver.	Denver	September 6-7, 1904.



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